

BRITISH COLUMBIA MINING RECORD

VOL. III.

OCTOBER, 1897.

No 10.

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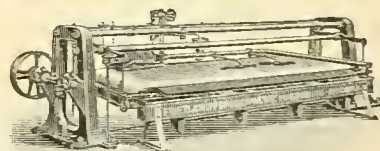
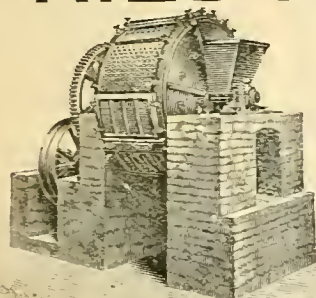
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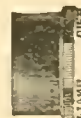


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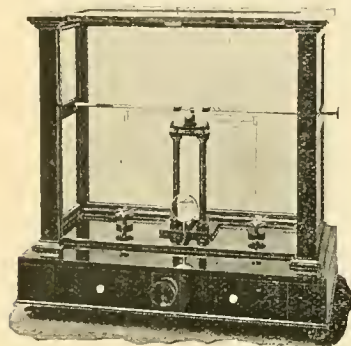
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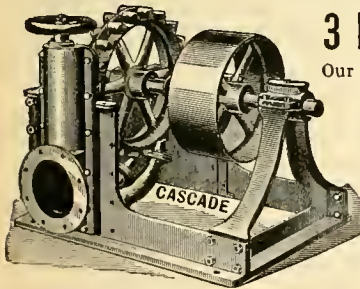
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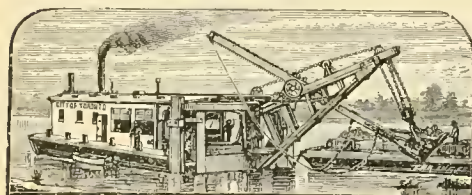
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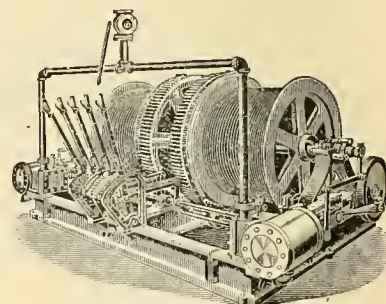
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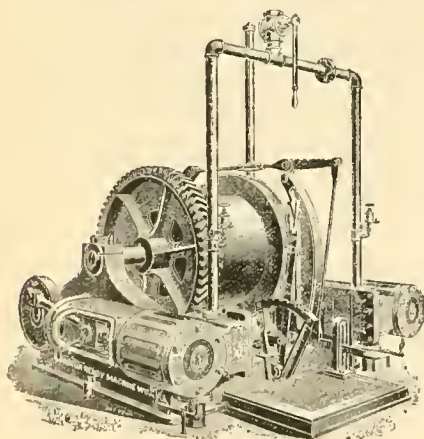
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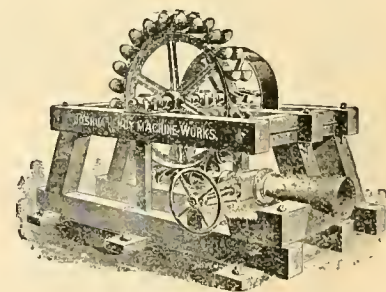
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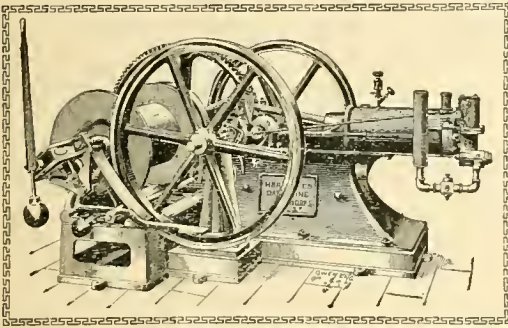
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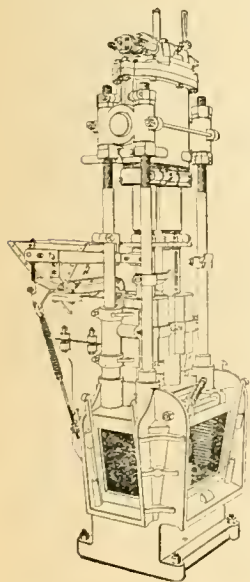
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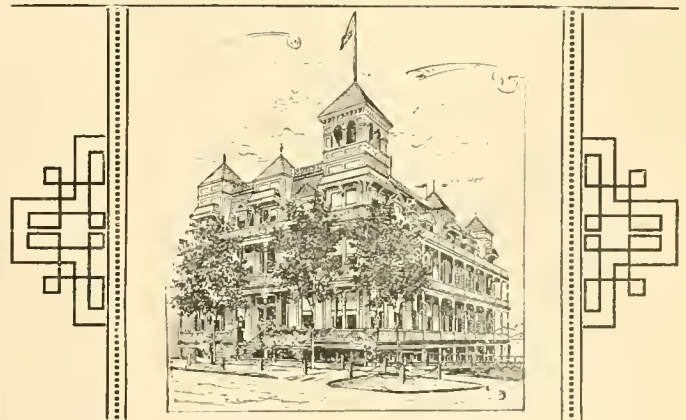
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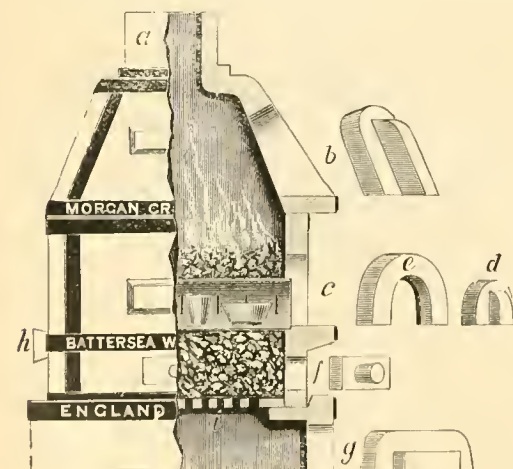
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EDITORIAL NOTES.

It took Old Country investors a long time to make up their minds with regard to South Africa. The South African boom was not by any means spontaneously brought about. It was the natural sequence of events; a stone moving slowly at first, but gathering impetus and velocity in its course. Precisely similar conditions prevail in British Columbia to-day as prevailed in South Africa five or six years ago.

The province's prospects were never better than they are to-day and there is now no doubting the indications of a future prosperity for the country; the potentialities of its resources are fast becoming recognized, but a legitimate boom in "B.C." mining stock on the London market is still an event to be fondly anticipated. But it will come.

The British investor is proverbially "leary" of new fields, and the only possible way of winning his confidence is to be able to show him a considerable list of mines in the country paying dividends. Now, in the case of British Columbia, we could not at the present time produce a list that would do credit to the coun-

try, for the very simple reason that the provincial industry of quartz mining is yet in its infancy. Mines are not opened up in a day, even when amply capitalized, and adequate development work must generally be done before dividends can be declared.

It is quite safe to say that bad management is frequently the cause of the abandonment of many a mine that otherwise would have paid well to work, and a manager that is in too great a hurry to ship ore often disregards important principles of scientific mining to do so. Once a mine is properly opened up and the permanency and value of its ore body to some degree assured then no investment could be much safer or more remunerative.

To investors in this country we would say that no time could be more auspicious than the present for investment in "B.C." mining stock, providing, always, ordinary business precautionary methods are followed. We venture to predict that with the completion of the Crow's Nest Pass road and the consequent cheapening of smelting and transportation charges there will be twenty dividend-paying mines in the province where there is one to-day.

The building of the railroad through the Crow's Nest Pass will assuredly stimulate mining activity in British Columbia to a marked degree, but the merchants of the North-West Territories and of Eastern Canada will, as a matter of course reap the benefit of the increased trade resulting therefrom. It is, of course, eminently more desirable that this should be the case than that Spokane or some other American town should continue to be the chief supply market for British Columbia up-country mining camps, but to Coast merchants the alternative does not altogether afford ground for unmixed satisfaction.

The question of supplying ways and means for the construction of the "People's Railroad" from the Coast to the Columbia River should still rightly be the most important issue for the consideration of the Provincial Government.

If the reports are true that Mr. Heinze has a force of engineers in the field surveying a route for a railroad between Penticton and the Columbia River, it is pertinent to ask the Government to ascertain at once whether it is the intention of the Columbia & Western Railway Company to accept the land grant subsidy or the cash bonus of \$4,000 per mile for the con-

struction of that part of the road from Penticton to Boundary Creek. If the latter alternative is preferred, and it probably will be, the land reserved to the railway company should at once be thrown open to settlers. Under the provisions of the Columbia & Western Ry. Subsidy Act, prospectors locating claims within the limits of the railway belt are required to purchase the surface rights at the rate of \$5 per acre; moreover, no land can be purchased at all as third-class land from the Company.

For the last two or three years at least the B.C. Iron Works Company of Vancouver have been considering the advisability of competing with the Americans in the manufacture of mining machinery to meet the demand of the home market. The Company, after taking their own time, have at length come to the scratch well-equipped, however, for the struggle. At the head of the new department for the special manufacture of mining machinery is a capable man in the person of Mr. Norborn, an engineer of wide experience. Altogether there is no reason why the B.C. Iron Works should not beat the Americans in this field at any rate. The fact that Vancouver is nearer the mines than San Francisco (where B.C. mine owners at present largely purchase their machinery) will not, perhaps, cut much figure, the usual generosity (?) of the C.P.R. in the matter of freight rates having to be considered. But a twenty-five per cent. duty on foreign manufactured machinery should give the Vancouver firm every opportunity to make a fair start.

The manufacture of mining machinery will in the course of the next few years be one of the most important of Canadian industries. It is estimated that the value of the machinery used in the Rossland Camp alone was nearly \$350,000 at the beginning of the year. Of this the equipment of the Le Roi mine cost \$150,000.

As in the case of Kootenay, our enterprising friends, the Yankees, are the first to recognize the possibilities of the new mining districts which are being opened up on the north-west coast of Vancouver Island, and it is possible that almost within sight of the new Government Buildings in the capital of the province mines may be owned and operated by Americans. It is also within the bounds of probability that unless we "buck up a bit" the Seattle or Tacoma merchants will successfully compete for the trade of the Alberni and Clayoquot mining camps. Here would clearly be a case of the devil to pay.

It is more than probable that in the course of the next few years East Kootenay will rank with West Kootenay in importance. This section of the province is now being opened up very rapidly, and the building of the Crow's Nest Railway will naturally hasten the development of its resources. In addition to gold, silver, copper and lead ores, coal of excellent

quality and in abundance has been found in the Fort Steele district. Petroleum springs here may also ere long be turned to profitable account.

Mr. Ogilvie, D.L.S., who recently returned from the Yukon, is credited in a Seattle paper with the statement that "twenty-three claims in the Klondyke district have produced \$826,000 already, and \$70,000,000 is not an exaggerated estimate of the amount that will be produced by 180 claims on Bonanza, Hunker and Eldorado Creeks during the next three years."

In view of the limited amount of development work that has as yet been carried on in the Klondyke, and in the absence of any systematic examination or even survey of the diggings, it is extremely improbable that Mr. Ogilvie, a man possessed of strong common sense, and moreover enjoying a high professional standing, would thus commit himself to so rash a statement and it is preferable to believe that the paper in which the report appeared is guilty of misrepresentation or of distorting his remarks. The gross culpability of some of the American Pacific Coast papers in booming Klondyke is a matter demanding the severest censure. It is true the rush to the north has somewhat abated for the present, but it has taken several months to convince people that the spring is the only season at which it is desirable to set out for the Arctic gold fields. Next spring, however, the excitement promises to be even greater than heretofore.

It would be interesting to learn whether the provincial constable (so-called) stationed at Clayoquot is "grub staked" as an "official" prospector by the Government. From all accounts he spends the greater part of his time in the hills locating claims—an occupation one would imagine that is not included under the head of regular constabulary duty.

Instead of an exodus of Canadians to the States, as has been the case in the past, we may hereafter confidently expect to see—indeed, the phenomenon may now be witnessed—Americans emigrating to Canada in large numbers. In the next few years the economic conditions now prevailing in Canada will have entirely changed, and it is safe to predict a remarkable increase of population, particularly in the western provinces of the Dominion. The British Columbia mines will give employment to many thousands, and settlers will turn to profitable account the rich agricultural and grazing lands of Chilcotin and other sections of the country, at present practically unexplored. A substantial increase in the population will be the means of removing the principal difficulties wherewith Canadian trade is to-day embarrassed.

Here is an interesting question for legal argument: "A" locates a mineral claim within the E. & N. railway belt and pays the Company as required \$260 for surface rights and base metals, in consideration for which payment he receives a title to the ground. He



PASSENGERS FOR KLONDYKE EMBARKING VICTORIA, B.C.

however, fails to do his assessment work and "B" takes advantage of this to "jump" the claim. Now, as "A" has a title to the land from the railway company what is to prevent him prosecuting "B" for trespass? If "A" can thus successfully prosecute, why should he comply with the Government regulations at all?

The building of railways in this province will, if the policy pursued in connection therewith by the present Government is not radically changed, tend to retard rather than hasten the development of our mining resources. The illiberal treatment of prospectors by the E. & N. Ry. Co. has to all intents and purposes put a stop to prospecting within the limits of the Island railway belt, and in the nature of things there is little reason to believe that the Columbia & Western Company will be very much more generous in dealing with those locating claims within the territory of the reserved lands between Trail and Boundary Creek. Moreover the Government strangely enough are seemingly anxious to stop all exploratory work in every part of the country directly it becomes (by *cultus potlatch*) the property of a railway corporation; otherwise why was the following extraordinary section of clause 39 inserted in the "Mineral Act, 1896?"

"And on the granting and recording of such certificate of improvements in respect of a mineral claim inside the railway belt the holder thereof shall be entitled to a Crown grant of such claim on the payment of \$5.00 per acre to the Mining Recorder."

Thus, according to the reading of this clause, a prospector acquiring a claim within (say the E. & N. Railway belt) would have to foot the little bill here-with appended:

To miner's license (five years at \$5.00).....	\$ 25 00
To recording claim	2 50
To recording assessment work (five years).....	12 50
To five assessments, to value \$100 per annum	500 00
To surveying	100 00
To E. & N. Ry (surface rights) 52 acres	260 00
To Government charge of \$5.00 per acre as per section 39, "Mineral Act, 1896"	260 00
	<hr/>
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But the limitation of expenditure necessary to obtain Crown grant of a claim outside of a railway belt is \$637.50, as follows:—

To miner's license (five years at \$5.00).....	\$ 25 00
To recording claim	2 50
To recording assessments	12 50
To assessments	500 00
	<hr/>
	\$637 50

Or the actual cash disbursement in the first case would be \$657.50 as against \$137.50 in the second.

Before venturing to comment on this rather remarkable regulation it may be mentioned that we sought legal guidance. Our adviser was much puzzled when asked to interpret the passage. Evidently, however, the clause either aims at stopping prospect-

ing altogether within railway belts, or its wording is so "ambiguous" that it certainly admits of the construction we have put upon it.

And still the English journals persist in the geographically false statement that the Klondyke gold fields are in British Columbia. As an instance we quote from London *Truth* of a recent date. *Truth* thus comments:—

"Efforts continue to be made to interest the public in British Columbia enterprises, but from information which I have been able to gather, very few of the new issues have caught on, and the public have left them severely alone. These flotations have undoubtedly been overdone, and the following table shows that within the last few months no fewer than twenty-two companies were started, chiefly for exploring *British Columbia gold fields, of which SEVENTEEN are Klondyke and Yukon companies* (the italics are ours), and five deal with 'B.C.' generally or with other portions of it. My advice to investors is to wait until results have been obtained from mines that have been developed and not to put money into wild-goose chases such as many of the above undoubtedly are."

This country is, geographically speaking of course, somewhat far removed from *Truth*, which accounts to some extent perhaps for some of the foregoing remarkable blunders. Nevertheless our contemporary's advice is sound enough, and we, who have already urged it, again endorse it:—Let English investors content themselves for awhile with putting money into the proved mines of Kootenay. Klondyke company speculations should, at any rate, meantime be religiously avoided, "big" names on prospectuses notwithstanding.

The Provincial Mineralogist, Mr. Carlyle, during his visit this year to the Trout Lake district, discovered instances where advantages had been taken of the leniency or looseness of the law in regard to the location of mineral claims and one case of a man having staked no less than sixty claims in this district is mentioned. Promiscuous staking is a very common practice in all newly established mining districts, and a certain class of prospectors devote a season's work exclusively to "locating" large tracts of land, not with the expectation of discovering mineral thereon and developing the find, but on the off-chance of selling out to advantage in boom times. It is not so long ago since this was a remunerative business enough, and apparently there are some of the opinion that it will be so again. But, meanwhile, it is distinctly in the interests of the province that legislation should be introduced to discourage this industry.

Yet how to put a stop to wild-cat staking and at the same time throw no obstacle in the way of legitimate prospecting is a somewhat difficult problem, and Mr. Carlyle's suggestion that a prospector hereafter should be obliged to do assessment work to the value of \$100 within sixty days of the recording of a find has raised a

storm of objection in Kootenay districts on the ground chiefly that such a regulation would discourage the poorer class of prospectors from following their calling. A better plan, we think is, to allow no transfer or sale of any new location or an interest therein to be recorded unless assessment work has been previously performed. But even here you leave a loop-hole whereof the unscrupulous will take advantage, and after all it is questionable whether such an amendment to the Mineral Act would strike at the root of the evil.

We would, therefore, submit the following suggestions in the hope that it will prove of some practical value: The Government should appoint in every mining division an official surveyor at an adequate salary. Every prospector recording a claim would be obliged at the same time to notify this official, who would set a date within a certain period for the survey of the claim, and the owner be then compelled to cut out a trail (not merely blaze lines) following his location lines on the four sides. A moderate charge, payable upon issuance of Crown grant would, of course, be required to cover the extra expenses of this system. If this plan were adopted it would, we believe, effectually check the present tendency to wild-cat staking, and, moreover, materially reduce the difficulties of prospecting in thickly timbered districts. Furthermore, official maps (kept up to date) of every mining district should be obtainable at the government offices, and a prospector would thus at once be able to learn what land was vacant and what was occupied. Again, any man staking ground, but failing to record it, should be liable to a very heavy fine or a term of imprisonment.

We do not pretend to say that the foregoing proposals can not be greatly improved upon, but in the absence of any better plan it is here advanced. We most cordially invite criticism.

Mr. W. Pellew Harvey, F.C.S., of Vancouver, acting as the representative in this province of Messrs. Vivian & Sons, the well-known smelting industrialists of Swansea, Wales, issued this month a circular letter addressed to the principal mine owners in British Columbia offering to purchase ore from them on behalf of his firm upon what may only be deemed exceedingly liberal terms, *i.e.*, seventy-five per cent. of the assay value of shipments, as determined by test at Vancouver, and the balance, less transportation charges, upon the arrival of the ore at Swansea. Moreover, the price offered by the Welsh firm for copper ore is nearly double that paid for this product in American markets. It is, therefore, encouraging to learn that provincial mining men are giving the scheme their support, and several consignments of ore have already been sent to Mr. Harvey for transshipment to Wales. In consequence it has been de-

cided to establish sampling and testing works, completely equipped, at Vancouver forthwith, and doubtless ere long Messrs. Vivian & Sons will build up a business in the province of considerable magnitude. The scheme offers particularly great advantages to mine owners in Coast and Island districts, for the proximity to Vancouver and the comparatively speaking small cost of water carriage thereto will enable these to realize after all charges have been deducted probably quite eighty-five per cent. of the gross value of the ores. Meanwhile the province could ask for no better advertisement. The reports from time to time in English journals of the arrival of large consignments of ore from British Columbia at the Swansea smelting works will do more to create a favourable impression of British Columbia in the minds of Old Country investors than reams of prospectuses crammed as full as may be with glowing accounts of the province's mineral wealth.

With a zeal worthy of the cause the *Inland Sentinel* is strenuously advocating the advantages of an all-Canadian route to Klondyke starting from Kamloops, and the series of articles on the subject that have recently appeared in this excellent publication will doubtless influence public opinion both as regards the feasibility of the line proposed and the benefits accruing therefrom to the province in general. But to our mind the principal argument in favour of the Kamloops or Ashcroft route is that very likely a majority of those travelling by it would never reach Klondyke, being tempted meanwhile to "locate" in the rich intermediate country and accept an assurance of at any rate moderate success where climatic conditions are at least congenial to probable failure and certain hardships in desolate Yukon.

With praiseworthy enterprise the C.P.R. have already taken the initial step in the project of providing rail communication between Telegraph Creek and Teslin Lake, *en route* for Klondyke, the Company's engineer being now in the field for the purpose of taking topographical notes. It is not improbable that the C.P.R. will realize greater profit from this hundred miles of road than from any five hundred miles of its continental highway. We cordially agree with *The Province* that the Provincial Government missed here an excellent opportunity of making what would have been undoubtedly a popular move—the construction as a Government undertaking of a railroad over the route now monopolized by the C.P.R.

We would respectfully ask for information regarding the Government Assay Office. For what purpose is it maintained (at a considerable expense by the way)? There does not appear to be any record kept of its work, but the bold and unsatisfactory statements recorded in the public accounts that the institution costs the country about \$3,000 per annum as against a Assay Office may have other uses besides actively

competing for assaying work with private firms, but if it has, what are they? If it hasn't, what excuse is there for its existence? The public evidently doesn't want to patronize it.

The *Western Mining World* thus very cleverly shows the inconsistencies and general unreliability of the reports published of Klondyke:—

"Having read with care the letters written by Montanians in the Klondyke regions to their surviving friends here on earth, we are now able to make a very accurate statement as to the prevailing conditions in that section. For convenience we have boiled down their communications, as follows:—

- "1. The gold reports have been exaggerated.
- "2. There is great scarcity of food.
- "3. The gold reports have not been exaggerated.
- "4. There is no scarcity of food.
- "5. Take the overland route; nobody but a fool will go *via* St. Michael's.
- "6. Take the St. Michael's route; nobody but a fool will go overland through the pass.
- "7. It is the chance of your life.
- "8. You will trade your life for the chance.

"In view of this information, gleaned from perfectly reliable sources, we trust none of our readers will start for the Klondyke on an empty stomach."

With the price of lead at \$4.20 per hundredweight, Slocan mine owners can well afford to be satisfied with silver at fifty-six cents. Lead, however, promises to reach \$4.50 ere long, and silver has likewise an upward tendency, the rise during the month being almost as rapid as the decline during August. The average monthly price of lead last year was \$2.98, hence the miner now gets for every ton of lead produced rather more than \$20 over last year's prices.

It is gratifying to note that both British and American leading financial journals are making strenuous efforts to discourage Klondyke company speculation by exposing the "bunkum" of many of the wild-cat issues recently launched in London and New York markets.

At the same time we firmly believe that the Yukon will yet become one of the greatest gold-producing countries the world has ever seen, but the investor must meanwhile await that period patiently when he can have at least better assurance than at present that his money will be spent to good advantage. We notice that in two or three cases promoters have been shrewd enough to realize that the public were getting a bit tired of Klondyke pure and unadulterated and as a consequence Yukon prospectuses have lately been spiced with vague allusions to British Columbia and West Ontario mines and with still vaguer proposals of including operations in these fields as a sort of side show in connection with the principal enterprise. But the "British Columbian Exploitation and Gold Estates, Limited" goes one better and casually

alludes to, without directly mentioning Klondyke to boom British Columbia. Here is an extract from the Company's prospectus:—

A Pioneer Patent Company. A Company with Ten Proved Claims. Seventy-three Further Claims under consideration.
GREAT GOLD FINDS IN BRITISH COLUMBIA.

RUSH OF DIGGERS
SIXTY-EIGHT PROSPECTORS WITH MORE THAN A MILLION DOLLARS IN GOLD DUST AND NUGGETS.
NEXT SEASON'S ESTIMATED YIELD FIFTY MILLION DOLLARS.
RICH FINDS DAILY.

The SUBSCRIPTION LISTS will OPEN THURSDAY, the 12th day of August, and close any time thereafter at the sole discretion of the Directors of the Company.

EIGHTY-THREE MINERAL CLAIMS, principally in the Districts of Chlna Creek, Alberni, and Rossland, British Columbia, at present placed before the Directors for their consideration.

Every facility will be afforded to male shareholders holding one hundred fully paid shares of joining the Company's expeditions to the gold fields, at little or no cost to themselves, under conditions and stipulations to be drawn up by the Board of Directors.

The number of the foregoing will be at the absolute discretion of the Directors, and will be materially regulated by the capital at the disposal of the Company.

Is there no way of prosecuting this sort of people?

In this issue of the RECORD an account is published of an interview our representative had with Mr. Ogilvie, in which that gentleman said that his estimate of the amount of gold that would be taken out of Eldorado and Bonanza in the next ten years, was overstated in the Seattle paper mentioned elsewhere in these notes. But he nevertheless maintained that \$60,000,000 would not be far wrong as representing the value of the gold in the creeks. Sixty million is no small order and we again question Mr. Ogilvie's prudence in making an assertion which cannot at the present time be substantiated.

ABOUT KLONDYKE—A TALK WITH MR. OGILVIE.

I HAD the privilege of a very interesting half-hour's chat with Mr. Wm. Ogilvie, D.L.S., yesterday (September 30th)," writes a RECORD representative. Our conversation was thus limited, because Mr. Ogilvie's time was very much taken up with business and he was leaving that evening for Vancouver to meet Mr. Sifton, the Minister of the Interior, whom he was to accompany to Dyea, but a great deal of information may be obtained in the course of an interview lasting only half an hour, particularly when the person interviewed is so conversant with his subject and so ready to impart his knowledge as Mr. Ogilvie.

Mr. Ogilvie soon made me feel at home in his comfortable room at the Driard. "Now," he said, "what can I tell you?" "Yes, of course, many of the reports that have appeared in the Coast papers—particularly in the Seattle and San Francisco papers—about Klondyke have grossly exaggerated the truth. They have credited me, I see, with a good many of these accounts, and the San Francisco *Call* published the other day a long yarn entitled, "An Interview with Mr. Ogilvie." As a matter of fact, I avoided the San Francisco reporters. When they asked me if I had come from Klondyke I would regard them with a look of the most astonished surprise. 'From Klondyke? What on earth makes you ask me such a question as that?' I would say and they would go off and look for another victim. But as an example of the exaggerations: I came down on the *Excelsior*, together with a party of men from the diggings. The papers stated that one man had with him gold to the value of \$65,000. I don't think he brought down half that quantity; and another man, who was reported to have \$60,000, only had \$1,500. Again, I see some of the papers reported that I had gone to Ottawa to formu-

late the Government policy with regard to the Yukon mining regulations. Did you ever read anything so absurd?"

"And what can be said of the country itself? Do you think the present excitement is justifiable?"

"Well, of course, all we have got to go upon at present are the extraordinary rich finds at Bonanza and Eldorado Creeks. There are 100 claims on Bonanza and forty on Eldorado that I do not doubt will produce a phenomenal quantity of gold in the next eight or ten years, before they are worked out. And then they have found some very big prospects on Hunker Creek. Other creeks have not yet been explored, and so it is all a toss up whether other strikes will be made of importance. Of course, you may confidently expect that rich quartz finds will be made. In fact, I have tested specimens of quartz found in the country which returned over \$1,000 to the ton."

"How about the predictions that have been made concerning the likelihood of distress and hardship during the coming winter?"

"It is a question of food supply. There will be enough to feed say 4,000 people. If there are 4,500 in the country it means starvation for some of them. And the idea of taking in supplies by dog train is utterly impracticable. The best dogs can only haul a sleigh any distance weighted with provisions enough for their own and their driver's use. As to hardships, there is a good deal of 'bosh' talked, naturally, by those who know nothing of the matter. The climate is severe, it is true, but men have resided in Yukon for ten years or more and enjoy perfect health to-day. The newspapers get their sensational stories of hardship and horrors from the loafers and the inexperienced men who consider they have done a big day's work if they carry a pack on their backs for a hundred yards. This is the class to be cautioned against going to Klondyke."

"Routes? Well, both the Dyea and Skagway trails are good if you want to get to the diggings early in the spring. By the way, every man going up next spring should take a year's provisions with him. But if you are not in a particular rush and prefer a more comfortable journey the St. Michael's route up the Yukon River is to be recommended. By this route you will arrive at Klondyke in July or August. River navigation is generally open for from two and a half to three and a half months in the year. The Hootalinqua River is navigable, I think, except in perhaps two places, where the channel might need deepening. Oh, by all means, urge the building of a railroad from Ashcroft or Kamloops. A railroad from either of these places would be a good thing for the province, and, though I can't say positively, I am strongly of the opinion that the engineering difficulties of the proposed line would not be unduly great."

"And the Government regulations?"

"Ah, there you've got me. I have my own opinions, of course, but I can tell you one thing, that all the talk of the certainty of trouble with the miners is the veriest nonsense. There are all sorts and conditions of men in the gold fields, all nationalities are represented, but they are a peaceful lot and they respect British law. Nearly all the foreigners there would be willing enough to become naturalized so long as they are allowed to mine in peace."

"Yes, of course, a large proportion of the gold will be taken out of the country, but you must remember the men who found it contributed largely to the coun-

try's revenue before they made their pile, and, as an American said to me the other day, 'If Klondyke gold does go to San Francisco, it will soon find its way to London, and Londoners will be reinvesting it in Yukon.'

"Do I know of many instances of luck? Yes, of several, both bad and good. Here's a case of what you might almost call bad luck. Two old fellows, both of them over seventy, came down with me on the boat. They had been mining for forty-two years. This summer they sold their claim on Eldorado Creek and realized about \$11,500 apiece on the sale. They had come down with this money to die. On the other hand, a young fellow who arrived in Klondyke this summer was fortunate enough to stake the adjoining claim on the creek, No. 23, to that owned by the two old men. He could now get \$200,000 for his claim at any time."

"During your stay in the country were you not ever tempted to acquire property with all this gold knocking about?"

"Well, no; I was not allowed by the regulations to stake out a claim for myself unless I first applied for permission, and this would have taken too long to get. I could indeed have bought interests cheap. In fact, I was offered on three different occasions half-interests in claims if I would give the owners an order on the store for \$200 or \$300 worth of provisions, but I always refused to do so because, you see, I was acting as a sort of arbitrator in disputes between the miners, and I thought perhaps if I owned property myself my judgment might be biased. Yes, if I had accepted these offers I would have been a millionaire to-day, of course."

"And you do not regret your refusals?"

"Regret? Why should I? I am not that sort. I have got enough to live on, and what good would a million dollars be to me? As to my sons, they can do what I have done, and they will be better men than if their father was a millionaire." And then with a pleasant smile Mr. Ogilvie bade me good-bye.

MINING NOTES FROM THE MAINLAND.

SAMPLING works are to be established in Vancouver under the management of Mr. W. Pellew Harvey by the Vivians of Wales. It is also probable that at an early date a line of steamers will be put on the route between here and the Wales smelter.

It is said that next spring the C.P.R. will put on a line of steamers between Vancouver and the North to connect for the Yukon.

Good news comes from the Athabasca Mine, Nelson. Four shipments of first-class ore have been made and the first three shipments averaged a gross return of \$75.00. The last shipment of twenty-eight tons, however, sent to the Hall Smelter, returned to the Company \$97.50 gross per ton. A shipment of 100 tons more of the same grade will be made this month.

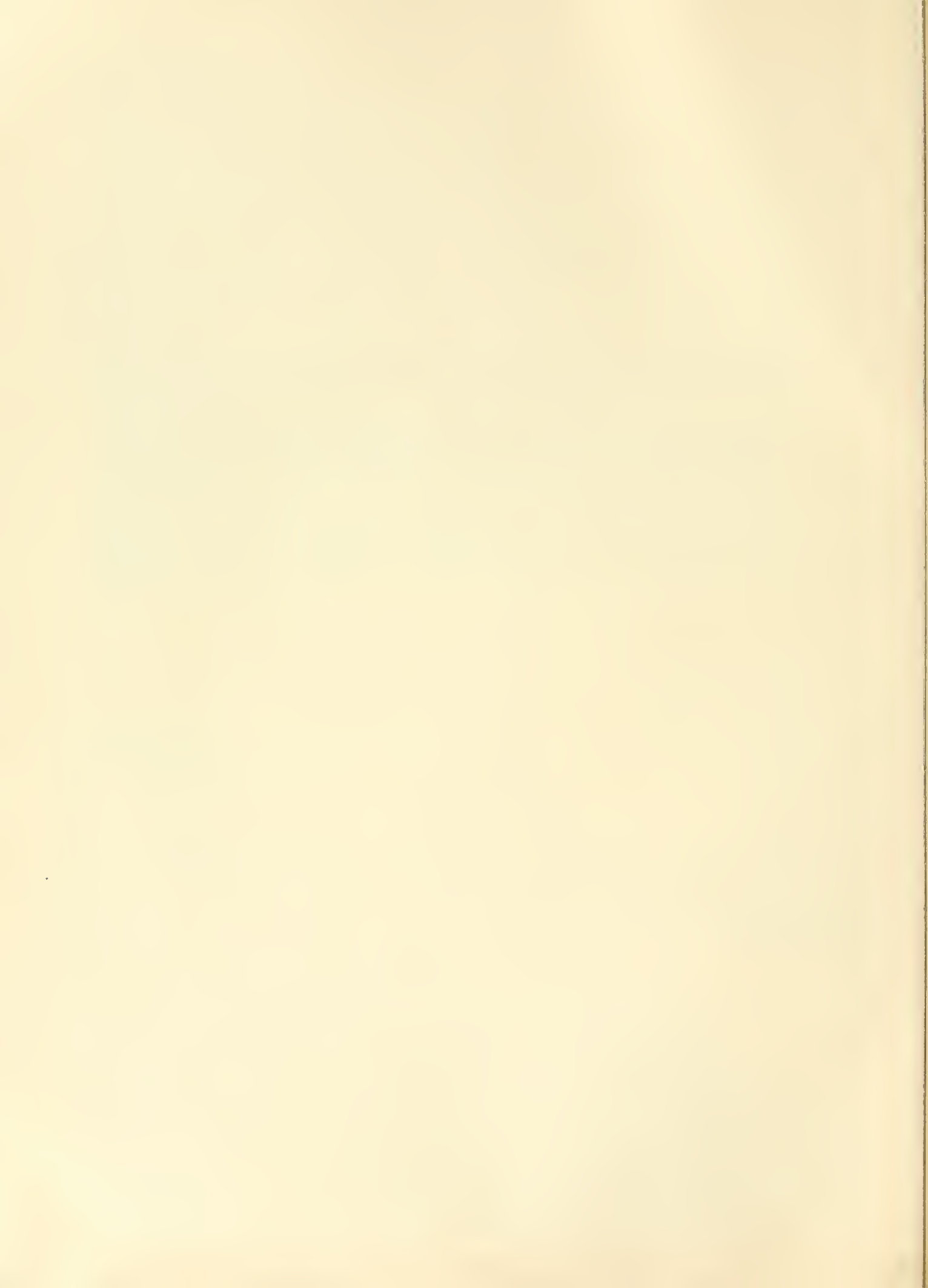
The Dominion Development Company was the first of its kind organized in British Columbia. The Company was promoted and has been managed to the present time by Mr. Jno. McQuillan. At the time the Golden Cache mines were purchased the Development Company raised for the purchasers in part payment of \$15,000 and got in exchange one quarter interest in the Golden Cache stock. One hundred thous-



STEAMER "ISLANDER" LEAVING VICTORIA FOR KLONDYKE.



JUNCTION OF FORTY MILE AND YUKON RIVERS.



and shares of this was free; the balance went into the Golden Cache treasury. This 100,000 shares was sold to Mr. H. Oldroyd, London, England, and the proceeds of this sale supplied the money to pay the enormous dividend before mentioned.

The tunnel of the Fire Mountain claim, Harrison Lake, is now in ninety-five feet, and the vein has increased in width from three and a-half to nine and a-half feet. The breast of the tunnel is rich in free gold, visible on the surface. The vein has been traced on the surface over 1,500 feet. The Company are so anxious to commence crushing that besides building a fourteen-mile road and working full shifts at the mine they are making strenuous efforts for the rapid completion of the mill and the half-mile aerial tram between the mines and the mill. The vein of the mine is a true fissure, and between the ore masses and the country rock there is on each side a gouge of soft clay. Assays of the pay chute to date have not gone under \$450. The pay streak is now widening and mixing with the vein matter, while the existence of a vein of copper running \$30 to the ton along the side of the white quartz of the vein has been discovered.

During September the chief topic of conversation in Vancouver was the big dividend paid by the Dominion Developing and Mining Company of \$1.75 a share or 700 per cent. on the capital stock of the Company.

When this appears in print the Golden Cache mill will probably be making its initial crush, as this is promised for the last week in September. The mill was ready a week ago but the tram is, at the time of writing, not completed.

Mr. Blewett, president of the Van Anda, went east this week to arrange for the purchase of a matting plant which it is proposed to install on the Island. There are now three thousand tons of ore on the Van Anda dump and to ship this in the regular way would cost a small fortune—i.e., about \$25 a ton—and a matting plant at the mine would reduce the cost of treatment to a minimum. The ore of the Van Anda is getting daily richer as depth is attained. The vein is now estimated by Mr. Blewett to be nearly twenty feet in width.

The huge bodies of low grade ore on Jervis Inlet are being noticed by capitalists. These mines are but seventy miles from Vancouver.

Of the Channe Mine Company's properties in Kootenay very good reports have been received. The Maple Leaf, situated on Wild Horse Creek, is showing up well. The lead having widened from three and a-half to seven feet with good indications. On the Centeur, twelve miles from Golden, the outcrops assay from \$16.00 to \$34.00, and on the Book Rest and Golden Hope, at the head of Ice River, the lode, which is three and a-half feet wide, assays from \$76.00 to \$194.00.

Members of the Golden Cache Company left for Lillooet last week to be present when the mill is put in operation.

Mr. J. R. Seymour, who visited the Lillooet and Fairview districts this month, gives a very glowing account of both camps. The Excelsior Mine adjoining the Golden Cache is the talk of the camp, he says. The tunnel was in 100 feet at the time of his visit, and assays taken at eighty feet from the mouth ran \$79.00, \$40.00, \$32.00 and \$10.00.

At Fairview, three ledges, all looking well, have been exposed on the Oro Fino and a shaft is being

sunk on a four-foot ledge, and is now down thirty feet.

On the Empress group and Dominion group three ledges have been located and thorough prospecting work is being done on all the claims. On the Dominion group the Gold Kettle ledge is very promising and a shaft has been sunk on the ledge following the foot wall.

A gentleman of the name of Remington has written from Salt Lake, Utah, stating that he will erect a smelter in Vancouver provided the city give him \$1 per ton on ore smelted up to 100,000 tons. He asks the Council to hasten their deliberations so that he may commence operations at once. The Council are to hold a special meeting to consider Mr. Remington's letter, whereof the following is a copy:

Salt Lake, Utah, Sept. 15th, 1897.

Alderman Brown, Acting Mayor,

Vancouver, B.C.

Dear Sir,—I received a letter from Mr. A. Williams who is representing me during my absence. First, I beg to say that he wired me requesting that I accept \$1.00 per ton royalty up to 100,000 tons of ore smelted. After due consideration I, laying the matter squarely before my people, persuaded them to accept the conditions and as he tells me you gentlemen have practically or at least tacitly acknowledged that that would be acceptable, I hope that under the circumstances you would push the matter as rapidly as you possibly can as it is all important that we close up this deal, as you know it has been dragging for many months. If possible I would very much like to get to work there this Fall and by Spring have the plant completed. I beg to say, as you must know that investments do not end with the smelter as it will be our business and of necessity we will be compelled to interest ourselves in many mining properties for the purpose of developing the same which will enable us to get sufficient quantities of ore for our works, moreover inasmuch as we have accepted your own term I do not think it just to entertain any other propositions unless very much better than ours and I feel sure that getting the class of smelting men thereby represented in this enterprise you will be better off and sure of a successful termination than to transact the business with parties unknown to you and unfamiliar with that nature of business. I requested Mr. Williams to submit a proposition to your Council that you select some one or two men as a committee to come to Salt Lake and examine the smelting plants at this place and satisfy yourself that all I have said to you is in every respect true. You will find the dimensions of our stacks the largest used in America and everything of the most modern nature which will enable us to do much more efficient work than the smelters now on the Pacific Coast. I hold myself in readiness to visit Vancouver at any time you may think it advisable and explain anything that may apparently be unintelligible to you, that is to say much perhaps about the smelting business that you are unfamiliar with and your co-workers in the Council.

W. H. REMINGTON.

The Alpha Bell Company have acquired two prospects on Bridge River that show unusually big surface indications. Every piece of rock picked off at random, crushed and panned, shows colour. Those who have seen the properties assert that the new prospects are the richest discovered since the Golden Cache excitement.

Lots in the Fairview townsite to the value of six thousand dollars have been sold.

Vancouver, B.C.

GOODMAN.

BY THE WAY.

MR. A. J. McMILLAN, well-known in this province, has been invited to lecture on the mineral wealth of British Columbia this month at the Imperial Institute—a task for which he is well qualified. The lecture will be illustrated by lantern slides, from photographs supplied by the Provincial Government and the MINING RECORD.

Mr. W. J. R. Cowell, of the Victoria Metallurgical

Works, left on September 25th *en route* for England, taking with him a fine collection of photographs of British Columbia (lent by the MINING RECORD), specimens of ore and copies of provincial newspapers published in the mining districts, and intends to make every effort during his visit to awaken interest in the Old Country in our great mineral resources. His address will be for the next two months at the Metropole, London. During Mr. Cowell's absence Mr. George Parsons, his partner, a former pupil of the celebrated Professor Pollock, will conduct the business in Victoria. Mr. Parsons is a thoroughly efficient assayer and has been personally superintending the business of the V.M.W. Co., Ltd., for some little time.

Mr. J. R. Packard, of Alberni, sends us a description and a drawing of a prospector's stamp mill of which he is the inventor. He claims that the cost of his contrivance would not exceed \$40 and that it is capable of treating two tons of ore in twenty-six hours. We advise our correspondent to apply for a patent at once.

"Subscriber" writes, just as we go to press, for information as to the best description of "rocker." We have sent him in reply a copy of an article on the subject recently written for the RECORD by Mr. George Parsons, of Victoria. The article was, we are sorry to say, crowded out of this issue.

The well-known firm of Fairview mining company promoters, Messrs. Dier, Davidson & Russell, have, owing to the rapid increase of business, been obliged to make Fairview, instead of Victoria, their headquarters. Fairview is forging ahead at a great rate, and the firm are building there a first-class hotel at a cost of \$20,000.

Our attention has been called to the fact that in the current issue of the "Directory of Mines" the Victoria-Texada Gold Mining Co., Ltd., is not included in the list of registered companies. This Company, capital \$150,000, was incorporated under the "Companies' Act, 1862" (Imperial), and registered November 18th, 1896, at Victoria.

The RECORD's advice to those contemplating setting out to the Klondyke next spring is "don't" unless either

- (1.) You are a practical miner;
- (2.) Understand "packing";
- (3.) Are physically strong, constitutionally sound, and are not viciously inclined;
- (4.) Have an adequate "grub stake";
- (5.) Can afford to wait perhaps two or three seasons before you strike anything worth while;
- (6.) Are not married; or
- (7.) You are dead "broke," with no prospects, and are suicidally inclined.

A FEW FACTS ABOUT CARIBOO.

IN your last issue I attempted to give you some idea of the development of auriferous gravel mining in Cariboo. Let me now lay before your readers a few facts that are little known about Cariboo. Along the valley of the Fraser and its tributaries very excellent wheat is raised and milled in the country, oats return a magnificent crop and the vegetables of Cariboo cannot be beaten in British Columbia. Some of the finest farms (ranches they call them) between Red River and the Pacific Ocean are to be seen on the Cariboo Road, over 150 miles north of the railroad. In the early spring the cattle fatten upon pea vine and

vetch, which grow most luxuriantly upon nearly every bench and ridge. Upon cheap and good beef and vegetables our miners fare well and the heavy freight rates, consequent upon remoteness from a railroad, is not very much felt.

There are many mining products produced in Cariboo. Near Quesnelle is found lignite, also on the tributaries of the Upper Horsefly and in a formation similar to that in which occurs the coals of Southern Alberta. I speak of Medicine Hat and Lethbridge. It is quite probable that where this lignite is found coal exists below.

On the divide between the Clearwater and Quesnelle water systems are huge bodies of galena, which are at present being exploited very quietly. South lie the Micha Mountains, well earning their name from the tremendous beds of mica which they hold. West and northwest are the mountains surrounding Horsefly, Quesnelle and Cariboo Lakes, extending to the Barkerville division in Snowshoe, Yank's Peak, Bula Mountain and Island Mountain, all containing quartz ledges well worth exploiting. At present only Snowshoe and Island Mountain are getting any attention, but they all are worthy of it.

Cariboo raises largely her own food supplies and fodder, has hundreds of thousands of acres of promising but unexploited ground for placers, miles upon miles of quartz reefs, gave British Columbia her first lift towards making her the choicest state in America, and when booms are bursting in inaccessible and inhospitable parts of the province, old reliable Cariboo will step in and lift you out of the slough of despond.

G. O. L.

THE VICTORIA METALLURGICAL WORKS.

OUR illustration, which appears in this number of the Victoria Metallurgical Works, gives a very good idea of the appearance of the building from Broughton Street. The works were established by Mr. W. J. R. Cowell, M.E., this year, and since the first shipment of ore was treated at the mill, on the 8th of July, over 100 tons of rock have been tested. Last month a joint stock company was formed to conduct the business.

The plant at the works comprises a Hercules-Blake rock breaker with a capacity of seventy-five tons a day feeding into the ore bins, which in turn supply the Challenge automatic ore feeders. There are two triple-discharge mortars with two stamps in each, giving a capacity altogether of from twelve to twenty tons per diem and a duty per stamp of from three to five tons. The stamps weigh 850 pounds, drop six inches 110 times per minute.

This combination of a heavy stamp and high speed together with the triple discharge gives a maximum crushing capacity with a minimum of slimes, results favourable to both amalgamation and concentration. This latter is accomplished by means of one Hendy-Norbom and one Triumph concentrator, the first named having a side slake, the latter an end motion. In this way parties may, by comparing the results of the two machines, decide which is most adapted to their class of ore.

There is also an elevator between the ore-house and crushing floor. The power is supplied by a twenty-horse vertical engine, lately installed, and better results have been obtained with the twenty-horse steam power than were given with thirty-five-horse power motors.

THE LATE ALEXANDER BEGG.

It is with the deepest feelings of regret that we have to chronicle this month the death, which occurred on the 6th ult., of Mr. Alexander Begg, late editor and founder of this journal. Mr. Begg was a man of extraordinary energy, of indomitable spirit, and it may be said he did not understand the meaning of the word "failure." He was, moreover, a man of kindly impulses and generous disposition, much beloved by all who knew him.

Alexander Begg was born in the year 1838 in Quebec, his father being a prominent druggist of that place. He entered at a comparatively early age the house of Law, Young & Co., an old established firm of importers, at Montreal, but his adventurous disposition led him to seek a less restricted environment and in the year 1866 he immigrated to the North-West, and in partnership with Mr. Bannatyne established a large trading business with the Indians.

Mr. Begg married in Hamilton, Ont., May 20th, 1868, Katie Glen Rae, a daughter of Dr. J. Hamilton, R.N., of Stromness, Orkney, and shortly afterwards dissolving partnership with Mr. Bannatyne he started the *Nor'-Wester*, one of the first newspapers published in Winnipeg. He then became Queen's Printer, Deputy Treasurer and Auditor to the Manitoba Government.

About this time he wrote his first book, "Dot It Down," a work of fiction, dedicated to his former partner, and shortly afterwards "Wrecks In the Sea of Life," and two historical works, "The Creation of Manitoba" and "The Great Canadian North-West." Upon the extension of the C.P.R. westward Mr. Begg was invited by the Company to take charge of their London (Eng.) office. During his stay in England he inaugurated the Crofter Immigration Scheme, and as the result of his efforts many hundred of Crofter families settled in the North-West and have since become prosperous farmers. On his return to this country the deceased gentleman resided for some years in California where he engaged in journalistic work and completed his "History of the North-West" dedicated to his old friend and colleague, the Governor of the Hudson's Bay Company, Sir Donald Smith, who has since been raised to the peerage as Lord Mount Royal and Stadacona. This work is recognized as being the best history of the North-West Territories written.

In the last few years Mr. Begg has been associated with several newspaper enterprises, and was the founder of the *Seattle Telegram*, the *Victoria News* and the *BRITISH COLUMBIA MINING RECORD*, all of which publications flourished under his management.

FROM SODA CREEK.

THE Cariboo Hydraulic Mine at the Forks of Quesnelle will pass this year into the increasing list of dividend-paying mines in British Columbia. Every succeeding season will see several additions to that list from the Cariboo district. Sham capitalists and second-rate experts are finding out that their sphere of usefulness lies elsewhere. Unscrupulous speculators have done great injustice to British Columbia's oldest mining district and for many years past intelligent prospecting and genuine development have been shamefully rare. After the manner of the good old days, when a hatful of gold was expected every morning before breakfast, prospectors sink a

hole, large enough maybe to break the neck of the unwary cow. Should they seem at all likely to take out less than Cariboo Cameron did, they promptly turn up their noses and label a large section of the country worthless. They at any rate are not going to play second fiddle to anyone. The day of the mining hog is, however, passing away, and the time is coming when a museum will receive his remains.

Now, after long waiting a disposition seems to be manifesting itself in the right quarters to plant capital in old Cariboo. It is, indeed, an ideal capitalist's country. Its certain rewards are not for weak companies, but for long purses and patience.

Up to the present, although stray parties have searched far afield, development has been practically limited to the country served by the main trunk road. Even here good authorities agree in declaring that there are many alluring propositions. But the fringe, for instance, of the wealth in Lightning Creek has been touched, and the gold, in spite of dredgers, is still at the bottom of the Quesnelle and Fraser Rivers. These dredgers are nevertheless being slowly and surely perfected. When one reflects how clumsy and inefficient the beginnings of most great inventions were, dredging prospects take a rosy appearance by comparison. They have, in fact, been even now partially successful and but a slight improvement in detail stands between them and perfection.

Some delusions are still abroad concerning Cariboo. Judging from sundry letters received here it would seem as though a large number of people imagine that we are not yet civilized enough to provide visiting prospectors and others with the provisions, tools, etc., that they require. But the worst misapprehension, and one common over the border, is that the mining royalties exacted in the Yukon are applicable to Cariboo likewise. Unless dispelled this idea will do us considerable harm. HUB.

MUSEUM FOR MINERALS.

AT present the most uninteresting and most useless department of the Provincial Museum is that devoted to minerals. The information on the labels describing the specimens is strangely insufficient and apparently no attempt has been made at systematic classification. Again, the collection itself is very meagre; indeed, specimens from many of the important mining districts of the province are not provided at all. It is gratifying to learn, therefore, that steps are being taken to remedy this unsatisfactory state of affairs. The old Legislative Hall is hereafter to be used for the purposes of a mineral museum under the charge of the Provincial Mineralogist, and no pains will be spared to make the collection worthy of the province and its mineral resources. A museum such as proposed will be of the greatest benefit both to students of mineralogy and to those proposing to visit the mining districts. It is, however, to be hoped that in addition to ore specimens, samples of the country rock characteristic of the localities will also be provided.

ALBERNI AND WEST COAST NOTES.

IT is perhaps not generally known that between two and three hundred mineral locations have been made in the Alberni Division this season. Some of these claims are very promising and altogether the outlook

for the west coast of the Island is most encouraging. The ore found here is chiefly copper carrying gold and silver; the copper is found as pyrites, bornite and grey copper of generally high grade value, and the characteristic rocks of the district are diorites, granites and lime.

Besides the valuable find of a large ledge of bornite on Sidney Inlet last month rich veins have been recently discovered on Nootka Sound. Prospectors as a rule have hitherto confined their attention only to exploiting the country on the water fronts, but there is every reason to believe that next season prospecting will be carried on farther inland.

The owners of the Alberni Consolidated are receiving most encouraging reports of the mine as development proceeds under the present capable management, and our correspondent, Jean Alberni, remarks that this is particularly gratifying news to the people of the district, as the former proprietor, whom he describes as the "generous donator to the Robert Burns Drinking Fountain Fund," gave the mine a "black eye" by employing an inexperienced college graduate as superintendent, with a force of coal miners under him, to open up the property, the result being naturally so unsatisfactory that the property was abandoned and the stamp mill removed from Mineral Hill.

Among the number of Americans who have recently visited Clayoquot in the character of investors was Mr. Andrew F. Burleigh, late receiver of the Northern Pacific R.R.

Prospectors at Clayoquot complain not unreasonably at being obliged either to travel all the way to Alberni by steamer to record or else having to pay an extra fee for swearing to an affidavit before the local Justice, Mr. Dawley. We understand that Mr. Dawley would consent to act as deputy recorder at Clayoquot for a nominal salary, and by making such an appointment the Government would win the gratitude of all the prospectors of the neighbourhood.

VERNON NOTES.

WITH us there has been very little doing in mining matters, but we are at work although not much noise is made about it and the near future may show that our faith in this district has not been misplaced.

Work on the Blue Jay is rapidly progressing, Mr. Latimer having taken a contract to drive a tunnel some hundred feet in length, and from the continued explosions heard in Vernon town that gentleman must be in a hurry to complete his work.

The hundred-foot tunnel on the Denzy has been completed, and Mr. G. Stumps has taken a contract to drive sixty feet farther in, and splendid results are anticipated. The owner, Mr. Kempson, recently arrived and expressed himself well satisfied with the appearance of the property.

The Morning Glory Mining Company are now hard at work putting in their stamp mill, which, after much delay, arrived here from Denver, Colorado, last week, and the owners have every hope of showing that they have not invested their capital for nothing.

Very encouraging reports are brought in from the Silver Queen, one of the Silver Star claims, where work is being prosecuted by the energetic prospectors.

Very little work has been done on the Bon Diable since my last reports. It seems a great pity that more

interest has not been shown in this property as it is second to none in the district, and unlike many other companies, the capitalization of the company owning it is moderate in the extreme.

A very promising claim has been inspected by a friend of mine, a thoroughly practical man, who gives a glowing account of what he saw. The property I refer to is the Hic Jacket, situated on Okanagan Lake close to the landing, and owned by Captain May. Captain May has put in a great deal of work on the Hic Jacket, which proves to be a very large ledge of exceedingly rich ore. The ledge is so placed that the ore can easily be transported to the lake or to the railway terminus. The owner is looking for a party to take a half interest in the property, and I do not think he will have to look far, for such chances are not to be met with every day.

In conversation with a practical man who represents a powerful syndicate (American, I believe) and who has had a number of men at work prospecting all through this district, he informed me, upon being questioned about the results of the summer's work, that some very satisfactory finds had been discovered and that we need not despair about the ultimate future prospects of Vernon, but that of course mining development was very costly and slow work, for which reason our motto must be patience and perseverance.

F. ADRIAN MEYER.

BY STEAMER, RAIL AND STAGE—A VISIT TO ALBERNI.

THE steamer was to have started at 8 p.m. As a matter of fact she left the wharf at sunrise the following morning. This delay, allow me to point out, writes a representative of the MINING RECORD, was not the fault of the captain of the *Willipa* nor directly perhaps of the C.P.N. Co. It was merely another example of the delightfully free and easy manner with which the merchants of Victoria attend to business. Among our passengers were several mining engineers and others whose time may be computed in dollars, and these men are to be delayed half a day or more on their journey because Victorian tradespeople, happy in the consciousness that the boat will not leave without freight, can not take the trouble to send their consignments to the wharf until long after the scheduled hour for the boat's departure.

Truly a state of affairs not calculated to impress strangers too favourably with the way business is conducted at Victoria. If the transportation company, however, made a point of running the boats on time, whether the freight was at the wharf or not, I am strongly of the opinion consigners would then literally very soon "come to time." Will the C.P.N. Co. kindly accept this as a suggestion worthy of immediate consideration?

From the deck of the steamer in the early morning the view was beautiful to a degree: the sea reflected the deep blue of the sky, and skudding along under full canvas, were several three-masted schooners and a brig. Occasionally a whale would rise to the surface to spout and the gulls were combining the business and pleasure of fishing in our wake and calling attention to the fact with shrill cries; the haze of the dawn gave the distant hills a mysterious grandeur, while to starboard one could distinctly see the surf beating against the rocky coast and imagine almost

that one could catch the sweet odour of the pine wafted from the tree-clad uplands. But, to be honest, I may as well state that all these impressions came to me later on in the day. The *Willipa* commenced to roll in an unseemly fashion just as I had finished my breakfast, whereat my system revolted, and until I had recovered, I, with the kindest motives, was quite prepared to consign the scenery to, well—Halifax. Nevertheless, to a man blessed with strong "works" and an artistic soul I can cheerfully commend the journey by steamboat up the west coast of the Island in the month of September.

After leaving the Race Rocks lighthouse, off which the Government ship *Quadra* was rolling about in the trough of the sea, some miles behind us, we pass Beecher Bay and then Gordon River, at both of which points some fine copper properties have this season been located; in fact mineral is found all up the coast to Clayoquot. At San Juan, where the steamer put in with supplies, there is an Indian settlement. The Siwash here, as elsewhere on the Island sea coast, have made a good thing out of sealing, and many of them have well-furnished houses. They have a great *penchant* for bedroom suites, which they describe as "hyas klosli iktas." The funny part of the matter is that they never by any chance make practical use of the suites when they get them. The bed is always carefully made, but the proud proprietor does not sleep in it, preferring, evidently, his mattress on the floor. It is no uncommon sight to see several bedroom suites, representing the winnings of a gambling bout, piled up in one man's cabin. Thus is the noble red man rapidly becoming civilized.

Before leaving San Juan I saw a very fine specimen of chalcopryite ore from a prospect recently found close to the water edge, stated to assay \$27.00 on the surface. The owners of this claim are now preparing to develop it. Opposite was another property where the ledge, I was told, has been crosscut for sixty-five feet, and the ore assayed as high as twenty-two per cent. in copper and \$29.00 in gold and silver. This would be a big thing even in Kootenay. Then at Nitinat there are some promising claims, and there can be no question but that eventually some valuable mines will be operated here. Towards evening we entered Barclay Sound, where again the scenery is magnificent. We passed a remarkable range of mountains with peaks for all the world resembling the teeth of a crosscut saw, and as the setting sun tinted these from a rosy pink to a sombre purple the effects were extraordinarily fine. The Sound is studded with little islands, some of them merely barren rock bleached by the sun and glistening with crystallized salt, but others are green with a luxuriant growth of foliage, and if one has not quite got over his mal-de-mer and in consequence is feeling a bit squamish and sentimental, it is easy to picture the delights of a Crusoe existence far from the maddening crowd amid the picturesque surroundings of Barclay Sound.

Up the Alberni Canal by moonlight is perhaps the most charming run of the whole trip. The canal is somewhat over twenty miles in length and from half a mile to rather more than a mile broad, and was evidently formed by volcanic action. As a natural harbour it could not be excelled and the largest fleet of the largest vessels of the world could here obtain safe anchorage. To the head of navigation the water close to the shore is several fathoms deep, and in mid-

stream often quite 200 fathoms. Mineral-bearing rock has been found on both sides of the canal, and the country is being now extensively prospected. The B.C. Trust, an English company have large holdings on the canal and recently started a camp at Efingham Inlet. Opposite, on the Sarita River, the Premier, Mr. Turner, and others have made an attempt to develop a prospect with, however, so far as I could ascertain, unsatisfactory results. Perhaps the reason was that "only Chinamen were employed." There are some very remarkable showings—great big ledges of high grade copper-gold ore at Uchucklessit Harbour and Long Basin. At the entrance to the harbour an English syndicate, represented locally by Messrs. Pemberton & Co., of Victoria, own several claims and have a force of men at present employed carrying on development work. A little further inland, at Anderson Lake, a number of claims have been located on an enormous ledge of high grade copper said to be 100 feet wide and traceable for nearly two miles. This deposit has been exposed by the cutting down in places of the cliff. Again, on the east side of the canal, at Nahimint, are some promising prospects, and a group here is now under bond for \$9,000 to the B.C. Trust Co. A ledge eighteen feet wide averaging \$25.00 to the ton is now being exploited to the north of Nahimint, but to cut a long story short, from the entrance of the canal to the old Alberni townsite the country on both banks is richly mineralized and is as good a field for the prospector and also for the investor as any mining district in the province.

About midnight the *Willipa* tied up at the excellent wharf recently built by Messrs. Waterhouse & Penney at the new townsite of Alberni. It is rather a matter for surprise that this spot was not originally selected as the commercial centre of the district. It is really at the head of navigation, for the boat must wait for high tide before it can steam the mile and a-half or so to the old town, and then, moreover, the tide must again be favourable ere it can leave on the return journey. Thus the boat is always detained twenty-four hours and frequently much longer on its journey, and the people at further points, Clayoquot and Nootka, pay the piper. Either the channel must be deepened to allow boats to call at Old Alberni town independently of tide conditions, or in the public interests the transportation companies should make the lower town the terminal. The latter alternative, if followed, it may be said, would be prejudicial to the interests of property holders in the original townsite, but I think it is very likely that Messrs. Anderson & Co., of Liverpool, the proprietors of both places, would, if the matter was fairly represented to them, act in as liberal a spirit towards the original settlers of Alberni as could be desired. The new town is situated at the mouth of Sumas River and was some forty years ago the site of a large sawmill erected by the present proprietors, Messrs. Anderson & Co., the well-known shipping firm of Liverpool, England. The enterprise was successfully carried on for a number of years, until in fact, the mill was destroyed by fire. About the year 1872 the workmen and their families moved away and the Indians removed all traces of settlement by pulling down and burning the houses that had been erstwhile erected.

The old town has been in existence some fifteen years. It is charmingly situated and has every ap-

pearance of prosperity. The population has increased very rapidly since 1890, when Mr. McQuillan, who, by the way, is the pioneer townsman, took the census, the number of residents then being 192. The town now boasts of two sawmills, several stores, an excellent hotel (the Arlington), a church, the government offices, a school and a number of substantial private houses. After staying over night at the Arlington I started on my tour of inspection to the mines at the head of China Creek, thirteen miles away, in a sort of antideluvian machine which the driver in all seriousness informed me (he had previously been called to the bar—more than once) was a spring waggon—possibly he meant “sprung”—it was, badly. Well, in this abominable rattle-trap we (there were five of us on board) commenced our toilsome journey over the newly made (?) government road from the new town-site. It was, to put it mildly, “rocky” in both the literal and metaphorical senses of the word, and my companions in misfortune were swearing audibly and at intervals during the greater part of the journey. At the end of three hours’ acute misery we reached “De Beaux,” which is a sort of log house combination of an hotel, saloon and general store. De Beaux, the proprietor, built the house himself, and, moreover, carried upon his back over a trail for ten miles most of the heavy furniture, including a stove. He is now beginning to do a profitable business, as he deserves, for his whiskey is quite beyond reproach and he is likewise a prudent man, who, having been once perhaps bitten, is now twice shy, as the following notice displayed in his dry goods department testifies: “Gentlemen—Please tack Notices no man Credit hear.”

From “De Beaux” you climb 1,300 or 1,400 feet over a very excellent piece of road built by Mr. Dunsmuir to the head of Mineral Creek, where the four claims known as the Alberni Consolidated and comprising the Victoria, Alberni, Warspite and Chicago, are situated. When I arrived sacks were being filled with ore, many specimens showing visible gold, whereof a shipment of five tons has since been sent for treatment to the Victoria Metallurgical Works. The history of this group of claims is interesting as showing how easily money may be thrown away in mining when experience is not brought to bear. Mineral and China Creeks have been worked for placer gold chiefly by Chinamen since 1862, and it is stated have yielded over \$40,000, but no prospecting for quartz was attempted until 1893, when a party of three Colorado prospectors located the Alberni group and subsequently sold to a company of which Mr. James Dunsmuir was a member and sole manager. To anyone visiting the property and possessing any knowledge at all of mine development work signs of mismanagement are unmistakable. For instance, a tunnel was driven to meet a shaft sunk on the lead higher up the hill, but owing to faulty calculations the connection was not made, but instead huge masses of rock were blasted away at the end of the tunnel until a chamber was formed large enough wherein to drive a coach and four. Of the men employed by Mr. Dunsmuir not one had any practical acquaintance with quartz mining, and even the man engaged to operate the two-stamp mill which was installed on the claim bungled his work. The consequence was that after a year’s work and the expenditure of a large amount of money Mr. Dunsmuir abandoned the property and removed his machinery and the Alberni Consolidated got a “black eye.” The

original shareholders, however, with commendable pluck, determined not to give up hope, and appointed Mr. James Moir, a practical miner, as mine manager. Since then matters have wonderfully improved. Twelve men are now in the Company’s employ and the leads (five have so far been uncovered and vary in width from a foot at the surface to four feet) are being thoroughly prospected and opened up, the main lode having been traced for nearly 2,000 feet. The Company expect shortly to ship forty tons of ore to the Tacoma smelter, but as shipment and treatment expenses are very heavy—quite \$20.00 a ton—it will not be long before a stamp mill is installed at the mine itself, when it will then pay to treat ore averaging \$10 values. The development consists at present of an eighty-seven-foot adit tunnel, with a ninety-three-foot drift, two shafts respectively seventy and thirty feet deep, a thirty-foot tunnel and surface work.

The ore is a blue quartz with free gold often visible disseminated through it in fine particles. The veins may be described as segregated, dipping at an angle of about sixty-five degrees to the east, with a northward strike of fifteen degrees, in a formation of diabasic and dioritic rock. Altogether, under capable management, the Alberni Consolidated claims have excellent prospects of becoming very valuable dividend-paying mines.

Before passing it has occurred to me that I should certainly give credit where credit is due, and while condemning Mr. Dunsmuir’s methods of quartz mining, it is only just at the same time to commend his enterprise here in the highest terms. The generosity with which he subsequently treated the shareholders of the Alberni Consolidated is also beyond all praise.

To the north of the Alberni group are situated two promising claims, the Missing Link and Champion. On the Missing Link is a three-foot ledge of quartz showing free gold. The property has been leased by the Victoria syndicate owning it to a party of prospectors who have already shipped several tons of ore, obtaining therefrom \$100.00 to the ton. The Mountain Rose, on the right hand bank of Mineral Creek, is owned by a syndicate of Vancouver merchants. This claim promised well on the surface, but the result of development work in the shape of a 200-foot tunnel was unsatisfactory. The country rock here is an argilloseous schist or slate.

Lately the Last Chance, adjoining the Mountain Rose, has shown up well. The ore, a rose quartz, assayed on the surface \$20.00.

The Ace of Spades, on the western slope of Mineral Hill, is also worthy of notice, and has a lead of quartz and chalcopryite from one to three feet wide running from \$20.00 to \$1,000 in gold.

Several claims have been located during the last two years on Douglas Mountain, about half way up China Creek. Most of these claims have good surface showings and carry a high copper percentage, and are well worth investigation.

A ride of five miles by trail from De Beaux’ takes one to the Golden Eagle at the head of China Creek. Here is another example of a good prospect condemned because of inexperienced management.

The existence of the Golden Eagle ledge was known nearly thirty years ago, and a celebrated expert, Prof. Phillips, of San Francisco, was at one time sent to examine it. In his report to his principals he predicted a future for the district and the claim but he did not consider the conditions to be favourable at

that time for economic quartz mining; hence nothing came of his visit. In 1889-90 a prospector named Archie McLaughlin was the first to stake the Golden Eagle, but he died all alone in the hills soon after and his bones are now resting near Ash Lake. In the autumn of '92, however, the claim was again located and shortly afterwards bonded by Col. Baker, acting as agent for the Duke of Montrose, for \$60,000, ten per cent. of which was paid down. Work was then started but instead, my informant told me, of driving tunnels to get depth, Col. Baker's manager seemingly "worked for elevation." The work proceeded for about six months when the property was abandoned as worthless and another of Alberni's promising claims was given a "black eye." It is meanwhile satisfactory to learn that a Mr. Newton, a mining expert, representing an English syndicate, has recently bonded the Golden Eagle, and that a contract is to be at once let for driving a 750-foot tunnel thereon which will prove the value of the claim beyond peradventure. The Golden Eagle lode is, as far as can be judged, from three to seven feet wide in a diorite formation and averages in value, according to Mr. Jas. Brady, M.E., \$7.00 and from three per cent. to five per cent. sulphurets; some of the ore, however, has assayed as high as \$155.98.

Space limitations, unfortunately, compel me to cut short my descriptions of the many fine showings in this vicinity, but I hope at some future time to refer particularly to the Bear, Bonanza, Great Divide, King Solomon and High Level claims, whereof at no very distant day I expect will give a good account of themselves.

On my return journey to Alberni I had barely time to visit the Duke of York and Cataract hydraulic claims on China Creek. The Duke of York was operated for some months by, I believe, an English company at a considerable expense. A flume over a mile and a-half long was built (in some places it was necessary to hang it by means of chains to the overhanging cliff) and the services of a California engineer were engaged. But all to no purpose. I am told this was another case of mismanagement; perhaps it was. Notwithstanding, the Alberni Gold Development Syndicate, represented locally by Mr. Bainbridge, a thoroughly practical engineer, and Mr. Armstrong, have acquired six hydraulic properties on the creek and have started sluicing at the Cataract with a 175-foot head of water. The benches on the Cataract prospect from twenty to seventy cents to the yard, and there really seems little reason why the syndicate's sanguine expectations regarding the property should not be realized. One thing is certain, they treat their employees magnificently. I don't think even Lord Lytton's gourmand Lord in Pelham would turn up his nose at the food supplied by the Cataract's cook. This syndicate, which, by the way, is composed of a few wealthy citizens of Liverpool, England, are acquiring a great deal at Alberni, and in addition to their hydraulic properties have purchased the Regina group of six claims on Mount Douglas, where they have already expended \$5,000 in development. They are, moreover, contracting for work to be done at the Enreka group on Granite Creek, and at the Happy John group of six claims near Green Cove, three miles northeast of Uchucklessit Harbour. To supply these camps on the canal with supplies scows are being built and the syndicate own a tight little steam launch to enable their

representatives to visit the properties when they find it necessary to do so.

In conclusion, Alberni is a camp of great potentialities, and the mineral showings will compare favourably with any district in British Columbia. To develop its resources capital is, of course, a *sine qua non*, but the capital must be judiciously expended. The district has suffered heretofore under the disadvantage of having no men of mining experience to exploit its lodes; even the mine labourers here are employed for the first time as such. In spite of this, with the undoubted mineral resources of the camp, the facilities for transportation, the abundance of excellent timber and water, it can only be a question of a very short time ere Alberni becomes as important a centre of mining activity as any of the Kootenay districts.

Precisely at five minutes to seven the "Royal Mail Stage," a very comfortable conveyance, drew up before the hotel door and as the hour struck we were off *en route* for Nanaimo. The Alberni-Nanaimo road is distinctly a credit to the province—excellently graded, level and smooth, it is more like an Old Country highway than perhaps any other road in British Columbia. To emphasize this statement it is only necessary to add that a lady recently rode a bicycle from Nanaimo to Alberni and back again—a distance of quite 120 miles—in two days.

For the first thirty miles, or about half the distance of the drive, the scenery is typically British Columbian. Great cedars and cypresses crown the hillsides and mountain streams of crystal water sparkle in the sunlight. The rivers and creeks swarm with trout and the woods are full of grouse and wild fowl. It is a country such as prospectors accustomed to the arid wastes of Arizona or to the sandy deserts of Mexico might well picture in their dreams. But here is the forbidden land encompassed round about by a railway belt. Near Cameron Lake, however, a copper claim is being worked, and I hear it is turning out very well, but otherwise neither mining nor prospecting is being carried on to any extent in this direction from Alberni. You get a glorious view of the Cameron Lake, by the way, from the "Hotel Metropole," where we stopped to register. The "Metropole" is a huge tree blazed on both sides for several feet and this space is covered with the signatures of travellers over the road dating from several years back. By noon we reached the half-way house, and enjoyed an excellent luncheon, starting again immediately afterwards and reaching Nanaimo well within the ten hours—a creditable performance enough. Nanaimo is a quaint and also a dingy town. At present times are somewhat dull there, but the people generally anticipate a business revival in the near future. I was introduced to a man in Nanaimo who, after many months of experimental work, has succeeded in manufacturing a preparation for preserving any sort of flesh food fresh for as long as you want to keep it. After this preparation (it contains no salt, by the way) is removed, your trout, chicken, or beefsteak is as sweet as the day it was, as the case might be, swimming about in some mountain stream, crowing in a barn-yard or forming an essential part of the hindmost part of an ox. The invention will doubtless be much appreciated in mining camps where fresh meat is often the greatest of luxuries.

The next day I take the 8:40 train for Victoria, where I arrive soon after twelve. I was just on the

point of describing the scenery *en route* from Duncan's but the editor tells me I have already chattered too much scenery and not enough of mining, and scenery is certainly the strong point along the E. & N. road, albeit the Leech River claims are being now very well spoken of, and prospecting is also going on about Goldstream.

FREE MILLING GOLD ORES.

THE question frequently arises as to what is meant by a free milling gold ore, and as the character of the ore is a matter of considerable importance in the purchase of a mine and in the subsequent erection of machinery, I will endeavour in this paper to throw some little light on this matter and render a short description of the various devices, mechanical and chemical, by which the precious metal, when in the free state, is separated from its accompanying gangue. Gold is found in the rocks of nearly all ages and it has been from the vast disintegrated masses of these, forming the alluvial deposits of California and other countries, that most of the world's gold has so far been obtained.

But since these deposits have, to a great extent, been worked out, the attention of mining men has been turned to the rocks themselves—the original source of the gold. Most of the gold of the present day is extracted from the quartz veins and lodes traversing the metamorphic rocks, the precious metal being frequently associated with iron pyrites, blende, arsenical pyrites, carbonate of copper, etc. It is also found in the mineral sylvanite—a compound of silver, gold and tellurium in nagyagite—a compound of silver, lead, copper and tellurium—and in very small quantities with galena.

It will here be necessary to consider in what condition the gold itself exists in the rock. We may take the following cases:—

1st. In which the gold occurs clean and practically pure and disseminated through the rock in grains of an appreciable weight.

2nd. When the gold is distributed through the rock in particles so small that they have no appreciable weight.

3rd. When the gold is contained in the sulphurets of the ore—in which case the gold occurs, not as true gold, but as sulphide of gold—which is a black powder, or it may occur as grains of pure gold coated with sulphur, arsenic or some other impurity.

4th. In which the gold is contained partly in the ore and partly in the sulphurets.

Now, in separating the gold from its accompanying gangue, advantage is taken of the facts that when clean gold is brought into direct contact with pure quick-silver, an amalgam or alloy of the two metals is formed, the separation being formed by pulverizing the ore by means of stamps and passing the pulp over copper plates coated with quick-silver, whereby the gold is retained on the plates, or by other amalgamating contrivances.

Now, if the gold in the rock is contained in the sulphurets, it exists as I have said, as sulphide of gold, or as minute grains coated with impurities. This gold is not "clean" and will not combine with the quick-silver. This, therefore, is not a free milling ore. Again, take the case of gold distributed in grains so small as to have no appreciable weight—in other words, flour gold. This gold, however clean

and pure it may be cannot be saved by battery amalgamation and cannot, therefore, be considered as free milling. In the case when grains of clean, pure gold of appreciable weight are distributed through the rock the gold will readily amalgamate. Such is a true free milling ore.

Now, let us take the last case—in which the gold is distributed through the rock partly as grains of clean gold of appreciable weight and partly contained in the sulphurets. This is a case of frequent occurrence in this country and one which has given rise to much discussion.

If an ore of this description contains sufficient free gold to allow of its being treated at a profit by the agency of quick-silver, then it should be classed as a free milling ore; but if, on the other hand, the bulk of the gold is contained in the sulphurets, the term is not applicable.

A brief sketch of the mode of procedure in the extraction of gold may not be out of place here. The ore is brought from the mine in cars and dumped on to grizzlies. That part which passes through the bars goes straight to the self feeders, the rest passing into a rock-breaker, where it is reduced to pieces the size of a walnut and that also passes into the self-feeders.

A No. 1 Blake rock crusher with 170 shakes a minute of three-quarters of an inch has a capacity of three tons an hour. By using a rock-breaker instead of feeding direct to the battery the efficiency of the stamp is increased twenty per cent. The self-feeders are hoppers or wooden pointed boxes placed above the battery and fitted with simple mechanism by which they are enabled to discharge a constant and regular supply of ore to the battery mortar. This supply is entirely regulated by the fall of the stamps.

The stamp battery itself consists of an oblong rectangular box constituting the mortar in which play a number of huge pestles or stamps. Generally there are five stamps in each mortar, and this combination is known as a stamp battery.

There is a longitudinal opening along one of the sides of the battery which is covered with a screen, and through this the pulverized rock is carried onto the plates by a stream of water. The bottom of the mortar is fitted with steel dies which receive the weight of the stamps. Each stamp consists of a heavy steel shoe fitted with a head or box which is attached to an iron stem or tappet. The stamps, which average about 850 pounds in weight, have a drop of from six to fifteen inches and are worked by means of cams attached to a horizontal cam shaft. The cams are so arranged on the shaft that each stamp has an independent fall.

Water is supplied to the battery, the quantity varying with the character of the ore. The water forms a wet pulp with the ore, and this pulp, by the impact of the stamps, is dashed in all directions. Some is thrown against the amalgamated copper plates placed inside the battery, whereby the contained gold becomes attached to the plates, some of the gold amalgamates with the mercury inside the mortar while all the pulp passes through the screens and flows onto the apron of amalgamated copper plates placed in front of the battery. The size of the screens and consequently the fineness of the pulp depends on the amount of sulphurets contained in the ore. Great care is necessary in amalgamating the copper plates, and experience has shown that they are most efficient after they have been used for some time and have acquired a coating of gold amalgam. On leaving the



VICTORIA METALLURGICAL WORKS.



OKANAGAN LAKE, B.C.

plates the pulp passes over the concentrates where the fine sulphurets are saved for subsequent treatment. The amalgam from a mill run is heated in a retort to drive off the mercury and the spongy residue of gold melted into a bar.

The cost of a complete plant for a stamp mill is calculated at \$1,000 per stamp. In a twenty-stamp mill this would include chlorination works. A ten-stamp mill requires six miner's inches of water and the power required is thirty-horse. The cost of milling varies at different mines, the nature of the ore, the cost of fuel and the facilities for obtaining a good water supply being important considerations. At the Providence mine in California the cost of milling is only fifty-six cents per ton, but this is an exceptional case.

PYRITES.

FROM FAIRVIEW.

PROBABLY never in the history of Fairview Camp has there been greater activity than at the present time and all indications point towards a decided, albeit a legitimate, "boom" in property there henceforward. It is now definitely stated that the Tin Horn mill of eight two-stamp batteries will be in operation by the 15th of next month and the superintendent, Mr. Sweeney, is now engaged preparing for a steady run. It is estimated that there is over 12,000 tons of high grade ore on the dump at the mine. The Winchester vein has widened to eight feet and the ore is maintaining its richness, "random" assays returning \$75.00. The work of stoping from the cross-cut is meanwhile being carried on and a large quantity of ore is on the dump.

Work is also being pushed on the Comstock, Mammoth and Shamrock, and all three claims are showing up well. It is asserted that even the country rock (whatever that may mean) on the Mammoth would pay to mill, as it assays no less than \$5.60 to the ton. This, however, may well be taken *cum granum*. The Fairview Consolidated gold mines, it is expected, will shortly put a large force of men on their claims, and have acquired a three-acre site near the river with the intention of erecting a fifty-stamp-mill thereon.

The Smuggler Company are placing a block of 30,000 shares on the eastern market in order to raise necessary capital for the purchase of a mill plant, and the lately incorporated Joe Dandy Company have installed their steam hoisting plant and have also, it is understood, ordered a twenty-stamp mill plant.

The fuel for the Tin Horn mill will probably be obtained from Messrs. Dier, Davidson & Russell's coal fields twelve miles from Fairview on the Pentiction Road.

GOLD FIELDS OF EAST KOOTENAY.

IMMEDIATE steps are being taken to open up the immense coal fields in the vicinity of the Crow's Nest Pass owned by the Kootenay Coal Company, of Montreal, and surveys and plans are now being made. The coal here has admirable coking qualities and can be supplied to the smelters of West Kootenay at a very moderate price. In consequence of cheap fuel and lower transportation rates due to the construction of the Crow's Nest Road mines in Rossland and elsewhere from which shareholders have up to the present received no returns will be added to the list of dividend-payers, and the provincial smelting industry will be developed proportionately.

NEW DENVER NOTES.

AS the Slocan is the district at present most vitally concerned with the price of silver, it is only natural that the fluctuations which have been in progress during the last month should here form the topic of all-absorbing interest. To say that serious apprehension for the ultimate welfare of the country was felt in the initial stages of the downward movement is merely to speak the truth, but it is equally certain that fuller and more thoughtful investigation of the subject in all its aspects not only showed no cause for alarm, but actually revealed the latent mineral resources of the district in such a way as to induce a stronger belief than ever in their permanence. Silver is now fortunately on the mend, while lead still exhibits an upward tendency. These two potent factors taken in conjunction with the probability of economical home treatment in the near future, will readily explain the calm manner in which the Slocan mine owners view the situation.

The citizens of Sandon are properly indignant at the totally unfounded but widely circulated report that their town was infected with the dread disease of cholera. The graphic description in the San Francisco *Examiner* was enough to turn the reader's hair gray with sympathy for the sufferers.

A serious cave-in has occurred in the stopes of the Slocan Star, extending right to the No. 5 tunnel. A large number of men have been laid off for the time being, as it will necessitate a stoppage of the work until the exact location of the fall can be ascertained and the requisite timbers replaced.

A very important question which is now in consideration by the mine owners of the Slocan is whether any reduction in the price of labour in the mines is feasible under present conditions. The recent action at the Noble Five was regarded in the light of a feeler on the subject, and now the Enterprise, on Ten Mile, has discharged the whole of its force and it is rumoured will be re-opened under new management on a three-dollar basis in place of three-fifty as heretofore. Whether the arrangement will be found to work satisfactorily only time can tell, but it is certain to meet with opposition from the miners if attempted.

The big deal involving the sale of the Alamo and Idaho group of mines, together with the Company's tramway and concentrator, appears to be finally concluded. The change is likely to prove of benefit to the camp in more ways than one; talk of driving an exploratory tunnel through the mountain has long been rife in the neighbourhood and it is just possible that something tangible may yet result of the scheme.

The Fidelity will make a trial shipment shortly, which promises to prove more than ordinarily remunerative to the owners. The good appearance and reputation of the mine is maintained as work goes on.

Four Mile properties are all looking up and the waggon road, which will soon reach as far as the Thompson group, should aid materially in furthering the work of development.

The force on the Galena Farm has been diminished temporarily while the new machinery is being installed, but will probably be increased again before long. Mr. Fradgley, the new manager, has recently arrived from London to take charge of the property.

Nothing has been done so far with respect to the waggon road up Springer Creek, but a good trail nine miles in length is now in course of construction.

up Lemon Creek to tap the numerous properties of merit there situated.

The Two Friends continues to improve and but for the fact that they are doing exceedingly well with their new venture, the Great Western, the original Company might regret having loosed their hold on the property.

The Meteor has a number of tons of ore on the dock *en route* to the smelter, returns from which are expected to average well on to three hundred ounces. This claim is noted for the consistent richness of its ore, which is of a dry quartzose character carrying argentite and various antimonial combinations.

The fever epidemic at Slocan City which threatened at one time to assume serious proportions, is happily suppressed as a result of the adoption of the Sanitary Inspector's precautionary measures. More frequent visits from that official would be fully appreciated by the residents here.

HOWARD WEST.

ROUND AND ABOUT SLOCAN CITY.

EVER since the first development work was done on the Slocan the name has been synonymous in the minds of the public with silver and silvers ores. That this should be the case is quite natural. The opening up of the immense silver-lead deposits of the northern part of the Slocan District did much to remove the antipathy to silver propositions which had become so thoroughly established in the minds of home and foreign capitalists. As soon as it was demonstrated that the "wet ores" on Carpenter Creek could be worked to advantage capital was not long coming in, and as a result the Slocan was first amongst the mining divisions of the province last year in the number of its shipping mines and the value of ore exported. The reputation of the district has been built up almost entirely upon the wonderfully rich returns from Carpenter and Four-Mile Creek ores, and in consequence the impression has gone abroad that this is solely a silver-producing district. That this is a mistake I should like to show. Last spring the old Slocan Mining Division was subdivided, the southern part being created a separate division and called the Slocan City Mining Division with a record office at Slocan City. The boundaries of the new division were happily chosen. The northern boundary line follows the geological line dividing the slate from the granite areas, and on the east, south and west the ridges between the lakes form the natural lines. This arrangement left the "wet ore" country within the boundaries of the old division, and the "dry ore" granite area within the Slocan City Division. Until 1895 no development work was done in the Lower Slocan Lake District; in fact, it was difficult to convince mining men that anything good was to be found in a granite formation. Last year quite a number of claims were opened up, but it was not until this year that efforts were made to thoroughly prospect and develop the country along Lemon and Springer Creeks. Reports of rich strikes in gold-bearing quartz on Lemon, Kokanee and Twelve-Mile Creeks were received by many in a dubious spirit, and it was some time before these "doubting Thomases" could be convinced that gold could be found in paying quantities in this locality. This season, however, ample evidence has been adduced of the existence of ore bodies on these creeks carrying gold in large quantities, and it was not long ago that

a list of over sixty gold properties of good promise appeared in one of our local papers, and the compiler did not pretend to furnish a complete list.

The Lemon Creek quartz is nearly all free milling and will average well over \$20.00 to the ton. The formation is entirely granite. The Alpine group recently purchased for \$60,000 by the Maritime Exploration Syndicate is possibly the biggest gold proposition in the locality. The vein is exceptionally strong, traceable for nearly 6,000 feet, with an average width of four feet. Mill tests give an average value of \$25.00 to the ton. A stamp mill will be put on the property this fall or during the winter. The Black Prince and Cold Blow groups have had a considerable amount of development work done on them this season, the former giving assays from the tunnel of over \$40.00 in gold and the latter \$54.00. Returns from the smelter showed a value of \$200.00 per ton on ore from the Chapleau and the mine is now a regular shipper. The Cameronian is a concentrating proposition, giving average assays of \$70.00. The Climax runs \$60 in gold. The Nelson, Crown Point, Model, Creole and Duchess are all gold properties of merit within a short distance of Slocan City. Again, a great number of the best-developed properties in this vicinity, while predominating in silver, give good values in gold. The Howard fraction, a regular shipper from Slocan City, gives average smelter returns of \$90.00 per ton, thirty per cent. of which is gold. The Meteor, another shipper, averages 250 ounces in silver and \$35.00 in gold. The Viking, on Springer Creek, controlled by English capitalists, gives assay values of \$330.00 in gold and \$100.00 in silver. The Exchange group ore carries \$20.00 in gold, besides silver. The Crusader, Regina and St. Louis have had development work done and show well in both gold and silver.

During the present depression in the price of silver, gold properties are at a premium, and it is therefore an opportune time to call the attention of capitalists to the field for safe and paying investments open to them in the gold fields of the Lower Slocan, and to disabuse the public mind of the mistaken impression that it is by silver alone that the Slocan must stand or fall. Capital is all that is needed to make this one of the most important gold camps in the province. At present development is greatly retarded by want of roads and adequate means to carry on work.

The Two Friends, which received such a black eye last winter through mismanagement on the part of Vancouver's company promoters, is being worked by the original owners and is shipping steadily from Slocan City. The last carload gave smelter returns of \$240 per ton. On the Arlington they are busy stopping ore for shipment.

A concentrator at Lemon Creek is almost assured and the owners of the Exchange and Howard Fraction groups state that it is their intention to put in plants on their respective properties during next season.

HUGH B. LYELL.

PROGRESS ON BOUNDARY CREEK.

THE work of Heinze's engineers is not causing any flurry in Greenwood markets as yet and the city is pursuing the even tenor of its way. The Hamil Block is nearing completion. This building is seventy-five feet long, fifty feet frontage and three stories high, with flat roof. When finished it will be the most imposing structure in Greenwood. A waggon road

is being built from the city to Summit Camp, going up Eholt Creek. Mr. Harrison has thirteen men at work on the B.C. in that camp. During the ninety days he has before a payment on his bond is due he hopes to accomplish as much in the way of development work as possible. If the property continues as rich as at present it will be one of the largest copper mines in the west—twenty feet of nine per cent. copper ore is not often found.

On the Josie, in the same camp and adjoining the R. Bell, a number of men have been working for the last few weeks. A great deal of native copper is found associated with such rich copper ores as chalcocite and bornite. The native copper occurs in a basic trap rock and promises remarkably well. Work this fall has placed Summit Camp in the foremost list of the various Boundary Creek camps. The Parrott Smelting Company are Crown granting two other properties this fall in that camp, the Minnie Moore and the Mattie Davis. Both claims look extremely well.

The Prospecting Syndicate of B.C. has resumed work on the North Star, having obtained a time extension on their bond. Their action with regard to the Jewel and Denoro Grande is usually spoken of as a game of "freeze out."

The sixty-horse-power boiler, hoist, Cameron pump and compressor plant is being set up on the Ironsides. Sinking will be resumed about October 1st and continued to the 100-foot, when cross-cuts will be run. The ore in the shaft for the last ten feet has been rapidly improving.

It is understood that the Brandon & Golden Crown Company have ordered a locomotive-boiler hoist and compressor. The progressive spirit of the company is commendable. They are losing no time in the thorough development of their properties.

It is rumoured that W. Y. Smith's recent visit to Spokane was in connection with a big deal on the Republic Mining Company's properties to a wealthy English syndicate. That the properties have been recently thoroughly examined by a well-known English engineer has transpired. These properties are among the most extensively developed in the district, and the fact that they contain high-grade ore that is free milling makes them a desirable proposition. The nature of the deal is not known, but from the high-grade character of the ore bodies it is probably for a larger figure than any other deal that has been made in the district.

Greenwood, B.C.

PIERRE O'TITE.

LYTTON AND ITS CLAIMS.

MINING articles of much interest from different parts of the province have appeared in the columns of the MINING RECORD, but I wish to call attention to one district which has apparently been overlooked. I refer to the district surrounding Lytton, which I firmly believe to contain one of the richest mineral belts in the whole province. Ledges of quartz, capped with iron, similar to the best mines in the Kootenay, abound in this district, especially in the vicinity of Lytton, and extending northerly and easterly on both banks of the Fraser and Thompson Rivers.

The Wrexham and Albani ledges about eight miles north-east of Lytton are capped with rock almost precisely the same as the Le Roi, of Rossland. The Lily

May mine, worked by John Francis and son, has a similar capping, and has given assays of \$406.00 in gold, \$2.00 in silver, and \$2.00 in copper.

The Faith mine, operated by the same gentlemen, is making an excellent showing. Its close proximity to the coast, and its situation on the main line of railway, give this camp superior advantages over those of the interior, and when a smelter is established at Vancouver ore would be shipped from this vicinity in large quantities.

One more thing in favour of this district is that in addition to the vast amount of smelting ore deposited here, there is also an abundance of free-milling quartz.

Although placer mining has been carried on all through this section of the country along both the Thompson and Fraser, yet as a quartz mining country it is only in its infancy, but I have no hesitation in predicting that before long it will rival the best camps in the lower country.

WALTER S. KEITH.

LARDEAU MINING DIVISION.

CONSIDERABLE progress has been made in this division during the last year, both in the development of old locations and in discovering of new. A great many prospectors from the Slocan and Rossland, hearing of the numerous strikes and of Lardeau's encouraging prospects, have spent the summer here, and the Mining Recorder has consequently been hard at work.

Prospecting has chiefly been followed on Fish River and its tributaries, and the most important of recent discoveries have been made on Pool, Lexington, Nine Mile, Sable, and Boyd Creeks.

On Pool Creek the greatest number of claims have been recently located, showing, in many cases, large bodies of clean galena. Some of this ore is rather low grade in silver on the surface, while other veins show over 100 ounces, besides high values in lead, and nearly all carry a fair percentage of gold, varying from \$2.00 to as high as \$20.00 to the ton.

On Lexington Creek, owing to the melting of the glaciers, some large bodies of ore have been exposed, running high in silver. Messrs. Myers & McMasters are now building a trail to their properties on this creek, with the object of shipping ore this fall, they having about five feet of clean galena exposed.

Nearly opposite the Lexington, on the west side of Fish River, is situated the Sunset group. Although this property is an old location, being located in 1893, no work was done thereon to speak of until the present season. The lead has been cross-cut at a depth of about twenty feet, exposing about eight feet of pay ore. On the foot wall a clean shipping ore was encountered, while between fifteen and eighteen inches of very rich galena, grey copper and sulphides was found on the hanging wall, assays from which give from 100 to 2,700 ounces in silver, and \$2.50 to \$10.00 in gold, the following being the result of three assays for silver: 565, 2,485, and 27,250 ounces to the ton, while the clean galena on the foot wall shows ninety-five ounces in silver, and should go high in lead, the matrix between the two bodies being concentrating ore. Several new locations have been made in the vicinity, all showing much grey copper mixed with the galena.

On Sable Creek a number of new locations have been made adjoining the Consolidated Sable Creek

Mining Company's property on the north. The ore is galena, carrying grey copper, and is high grade.

Some very choice grey copper specimens have been brought down from the Consolidated Sable Creek Company's property. This ore runs high in gold, as well as in copper and in silver.

The owners of the various properties are now constructing a good pack trail from Fish River to Sable Creek.

On Boyd Creek the Glengarry is being steadily developed. The vein has been cross-cut at a depth of forty feet, showing up over three feet of solid galena. This ore also carries much grey copper, and assays from fifty to 250 ounces in silver to the ton and about seventy-five per cent. lead. The Jim Dandy, which adjoins it on the north-west, and the Bloomer, which adjoins the Jim Dandy, are also reported to be showing up well. These properties are on the dividing line between the Lardeau and Trout Lake Divisions. The Kootenay Chief, owned by Mr. Blackwood, of Winnipeg, has been opened up with a thirty-five-foot tunnel. It is reported to be showing well. This claim is also on the Glengarry vein.

As the ores in the Lardeau are all high in lead, the recent drop in silver will not affect their values materially, the increased price of lead more than counterbalancing silver's market depreciation of late.

The recent strike on Gainer Creek of rich quartz containing free gold has stimulated prospecting for this metal in the district. In the vicinity of Fish River many quartz veins are found in slates, schists, porphyry or lime formations. Very few of the veins have ever been prospected, and no doubt good results will follow a gold excitement in the district, as the presence of that metal is not only discernable in the creeks, but also in the galena lodes. Some nice looking specimens of sulphide ore have been recently brought down from MacDougall Creek, from which good gold values had been received. This is also on Fish River.

Comáplix, the new town at the entrance to Fish River on the north-east arm of Arrow Lake, is fast assuming the appearance of a thriving town. Streets are being graded and a large number of houses have been lately erected. Comáplix has a bright future in store. The Kootenay Lumber Company, under the able management of Mr. Magee, is waxing prosperous. The company already has its own electric plant, and gives employment to a large number of men. The Hotel Lardeau affords first-class accommodation for as many as fifty guests.

FROM KASLO.

SO heavy have the ore shipments over the Kaslo & Slocan Railway been recently that it has been found necessary to increase the number of freight cars on this route by fifteen. The rolling stock has also been augmented by the addition of two new passenger coaches. For purposes of comparison I give the shipments for the months of August, 1896 and 1897: Shipped over K. & S. Ry., August, 1896, 1,143½ tons ore; same for August, 1897, 3,892½ tons ore; difference in favour of last month, 2,749½ tons, notwithstanding the fall in silver.

As far as the writer's knowledge goes, not a mine in the Slocan closed down. Wages were not reduced and the force of the mine was curtailed. The building of concentrators, construction of waggon

roads and the installation of permanent improvements at many mines went ahead as steadily as though silver were on a standard basis and the value of lead "cut no figure."

It is now an accepted fact that Kaslo will have a second railway before another year passes and very probably before the coming year is many months old. In fact, every thing points in that direction. The Nakusp & Slocan is surely "heading" for Kaslo from Three Forks. The survey has already been made to Whitewater, seventeen miles from Kaslo. Vice-President Shaugnessy, of the C.P.R., gave reasons for such a belief while on a recent visit to Kaslo, and Supt. Marpole has made overtures for wharf facilities in Kaslo Bay. Yet many believe this feeder for the C.P.R. main line will terminate in South Bay, at Kaslo, where ample room for yards, etc., could be had and a splendid harbour after breakwaters were constructed. It is said the engineers are already in the field working from Whitewater to Kaslo.

The late slump in silver has caused quite a number of mining men to inquire into the methods of smelter people and ask why they still deduct ten per cent. for loss of lead and five per cent. for loss on silver, when it is well known that with the many improvements in smelting during the past few years these losses do not actually occur. The writer has often wondered why these questions were never brought forward before.

It is well known to all who market lead ores that a smelter will not purchase such ores on the result of a wet or humid assay. All assayers or metallurgists know that by this process only the exact amount of lead in ore can be determined, but in the prevailing fire method of lead assaying the loss by volatilization from the assayer's crucible is accepted as identically the same percentage as is lost by the smelting process. The same facts apply to silver. The writer hereby submits the above facts to the consideration of the Kootenay Mine-Owners' Protective Association, who propose to ventilate this and other questions.

Kaslo's nearest mining district, the South Fork of Kaslo River, is fast becoming a locality of considerable importance. The two and three-quarter-mile waggon road to the Montezuma concentrator site has been completed. The grading for the concentrator is finished and all the cribbing is in. Work is being prosecuted on the flume to supply the mill with water and on the 8,500 feet of aerial tramway to convey ore from the mine to the mill. Nearly all the lumber for the superstructure of the mill has been delivered at the siding of the K. & S. Ry. at Nashville and will be immediately hauled to the concentrator by trams.

Farther up the creek crews of men are at work at the Black Fox, Kimberly, Gibson, Briggs, B.N.A., Silver Bell, Silver Bear and other properties.

There is great need of the present waggon road being extended a number of miles up the stream, as there are several mines which have reached an extensive shipping stage, and by next season a considerable amount of machinery should be placed on different properties, which will make a waggon road an absolute necessity.

There are strong probabilities that Kaslo will have a still nearer mining district than the South Fork within another season. During the past summer several hardy prospectors followed up a creek parallel to but not so extensive as the South Fork, and about one and one-half miles nearer Kootenay Lake. About

two miles from Kaslo River, after crossing a lime dyke about one-half mile in width, they came onto a mineral-bearing section about one mile in width, lying between the above-mentioned lime dyke and the barren bull granite which exists more or less in West Kootenay. Although the country was covered extensively by wash, yet diligent prospecting caused several large and healthy veins to be uncovered. So flattering are the surface showings that quite an amount of development work will be done the coming fall and winter. Should the expectations of the claim-holders be realized, Kaslo will have paying mines within five miles of the city by railway and trail.

Although Kaslo, by virtue of her position is the real *entrepot* and outlet of the famed Slocan, and is the supply point for the Duncan, Lardo and other districts, yet nature appears to have caused the rock-ribbed hills immediately surrounding the city to be barren of valuable minerals in paying quantities. In the past six years thousands of dollars in labour and supplies have been expended in searching for hidden treasure, and for half a decade previous prospectors have explored the mountain sides sloping toward Kaslo River, ten miles back from its mouth, and so far none have been rewarded. Scarcely an assay high enough to enthuse the weary searcher has been obtained. It is now becoming a settled fact that the mineral belt is cut off by the great lime dyke which crosses the country south-east by north-west a couple of miles to the south, and where another mineral belt begins before the Duncan and Lardo are reached has yet to be determined.

Knowing that Mr. Alexander Begg has passed to the great beyond, and never having had the pleasure of his acquaintance during life, yet I realize that Canada, this province and the mining interests lost a firm friend when the pen—which is mightier than the sword—dropped from the nerveless hand of the late head of the Mining Record Company.

I formed my opinion of Mr. Begg and sustained a great friendship for him through the instrumentality of a number of letters received from him since my correspondence for the RECORD began and, like his more intimate personal friends, I sincerely regret that his work was finished and that he was called to his rest at this time.

R. H. KEMP.

THE GOLDEN MINES.

THE prospects of mining in this district have never been brighter than at the present time. The slump in silver has caused enquiry to be made anent the gold and copper properties with which the district abounds. Good news also comes of an arrangement that is being made for the provision of English capital sufficient to develop those prospects which are worth handling with a view to proving their value.

New discoveries continue to be reported. R. Edwards, of Donald, reports having found a fourteen-foot ledge in the Bluewater country which carries free milling gold. A. J. Hopkins, of H. G. Parson's store, reports a rich strike on Toby Creek, where in getting round a glacier out of the way of a forest fire, he found two veins of crystalline quartz showing well in grey copper, and giving high assays. One of the leads is visible for 700 feet. The activity on Toby Creek, Dutch Creek and other parts of the Windermere district has been very great this season, and something like 400

claims have been staked, a large proportion of which give promise of developing into good properties.

The most interesting event in mining during the month relates to the properties of the Kootenay Consolidated Company, operating in the McMurdo district. Great success has attended the development work, which has been carried out under the management of Major Clohecy, of Everett, who is one of the principal stockholders in the Company. As a result a lead has been exposed on the property and proved for a depth of 750 feet. The vein matter is quartz, and assays from a quarter of an ounce to nearly seven ounces of gold, besides returning high values in silver and copper. The gold seems to run largely in the white iron, which amounts in places to half the bulk of the vein matter. On the discovery being announced, the president of the Company, Mr. Bennison, of Everett, Mr. Cooley, a solicitor of the same city, and Dr. Mitchell, of London, England, who are all heavily interested in the property, paid a visit to the camp for the purpose of inspecting the claim, and have since decided to put in winter camps on the Bennison and Boston and Crown Point claims so as to push on development work and be ready in the spring for the building of a tramway and concentrator at a cost of \$100,000.

Good reports come in from the properties on Bugaboo Creek recently bonded by the Golden and Fort Steele Development Company from Mr. Mercier, and arrangements have been made to get out a shipment of ore.

The C.P.R. announce that they will carry ore from Golden to the Swansea smelters for \$20 per ton, and it is likely that some shipments will consequently be made.

Donald is the centre of a certain amount of mining activity. Thanks to the efforts of Mr. Forrest, of the Forrest House, a showcase has been placed at the railway station in which is exhibited a nice collection of ores found in that part of East Kootenay.

The Calgary Company which is operating on the Bald Mountain west of Donald has been putting in a tunnel to strike the lead, and their work has been attended with success. The vein is of quartz and pans freely in gold.

J. Barr is working on a strike which he made on the Blueberry River. It is quartz, and though it does not run high in gold he hopes that the size of the leads are such as to make his claim a profitable one. The leads are between thirty and forty feet in width.

"Dan" Taylor has made a strike on No. 2 Creek, having discovered a large ledge carrying gold, silver and copper.

The Alberta and Kootenay Company are pushing on with the development of their claim on Copper Creek, having this month let a contract for sixty feet of tunnelling.

Messrs. Joliffe and Stracey, who recently purchased the Maud S. and Standby claims in the International Basin, are carrying on development work extensively, a contract for another 500 feet of tunnelling and shafts on their claims having just been let by them.

G. Willis, of Vancouver, manager of the Channel Mining Company, has been spending a week in the district and has bonded the Centaur claim on Fifteen Mile Creek, near Golden, and has already started work thereon. Mr. Willis has also bonded from T. Wilson and W. Peto the Book Rest and Golden Hope

claims on Ice River. The assays from these claims ran from \$150 to \$250 per ton, the values being found chiefly in the gold and copper.

Both at Golden and Donald the townspeople are urging the special advantages of their respective towns as starting points for the all-Canadian route to the Yukon. Meetings have been held, at which it was contended that the route up the Columbia, Canoe, Fraser, Parsnip, Findlay, Black, and Liard Rivers was the shortest route from railroad communication that had yet been proposed, while a part of the road is already made and the rest is easy of construction. The opinions of such men as Sir William Dawson, Sanford Fleming, C.E., W. Moberly, C.E., were quoted in favour of the route, which would travel the long and remarkable valley along the western base of the Rocky Mountains. The matter has been brought under the notice of the Dominion and Provincial Governments.

The new Gold Commissioner for North-East Kootenay, Mr. Griffith, C.E., is giving great satisfaction since he has entered on his duties by the special attention that he is giving to the trails into the mountains of the several mining camps.

Mr. Bostock, M.P., appears to have the hearty support of those representing the mining interests in his constituency, and his recent Parliamentary labours have been well appreciated here. On the occasion of his visit to the district last week Mr. Bostock was banquetted at Golden, the "function" being a great success.

Golden, B.C.

E. A. HAGGEN.

ROSSLAND NOTES.

THE visit of the Liberal speakers from the Coast, who stated they had come here merely for a holiday trip, but remained to give us lengthy reasons why the Provincial Government should change hands next spring, did not attract very much attention. To the Rosslanders, Victoria was a long way off and the spring seemed a distant future, and if Mr. Maxwell had told us what he thought of our mines as a paying investment he would have created a keener interest than was evinced at the political meeting held in his honour.

The great topic of conversation is still the transportation question. Nothing seems settled, nobody knows anything definite. Large survey parties have been sent out by Heinze between the Boundary country and Penticton. The laying of the track between Robson and Trail is rapidly progressing; some ten miles or about one-half of the distance, are practically completed and the remainder will soon be finished. Some delay has occurred owing to the difficulty of obtaining sufficient men. A visit to Rossland by the contractors in the hope of obtaining 150 labourers to finish up work on the line had extremely poor results. Every man in Rossland seemed to be either in possession of well-paid work or else the contractors were offering too low a rate. The line is to be broad gauge and the rolling stock of the C.P.R., it is rumoured, will be used upon it. The present track between Trail and here is narrow gauge. F. Aug. Heinze declared his intention last July of widening this to standard, and now says that he will do so, but not until after the winter. Still the clamour is for an independent line into Rossland in order to get transportation to smelters which are to be erected in the

vicinity. Whether the C.P.R. will come into Rossland or not is still doubtful, Mr. Shaughnessy not having been heard from further. The engineers of that line are surveying that portion of the road between Robson and Rossland which lies between Sullivan Creek and the first named town.

Some of us, despairing of a solution of the vexed question, wish to have a duty imposed on all ore exported. They hope that this will have the effect of creating a smelter industry on the Canadian side of the International Boundary. The erection of the smelter at Northport is regarded with a good deal of disfavour, but most Rosslanders, as evinced by their mass meeting and by the petition got up to the Provincial Government, decline to believe that matters can be mended by "cutting off our nose to spite our face."

The Monte Cristo, Colonna, Iron Colt, and Columbia and Kootenay have shut down. The last named closed pending the completion of the purchase. The Iron Colt being dependent upon the Columbia and Kootenay for its compressed air, had to suspend work. The Colonna closed, being dependent similarly on the Monte Cristo. On the latter mine heavy strikes have, it is rumoured, been made. The rumour is borne out by a big jump in Monte Cristo shares coincident with its shut-down.

The Elise shareholders have released that property from the debt which has been hanging over it all summer and will now go ahead with development.

The Silver Bell Company has leased its property, the Lone Jack and Nancy Lee, both silver-lead propositions, for one year, with the option of two. Work is to proceed at once.

Some mining experts have been lately examining the Le Roi property with the view of obtaining an option for a London syndicate. This, it is said, the company will not concede. Be that as it may, it is certain that the Le Roi is employing more men than they ever have done heretofore and forms a very important factor in the pay-roll of the city.

The Centre Star and War Eagle are also working and have big showings of ore stored in the mine and lying on the dump ready for shipment.

The Cliff, Evening Star, Josie, and Good Friday are in full work, and generally a good deal of development work is being carried on in smaller mines, which will, no doubt, in the near future, contribute heavily towards the total output of the camp.

Two experts made a close examination of the capabilities of the City of Spokane, but the public have been left in the dark concerning the true reason of their visit and whether the mine is to change hands or not.

Col. Topping's Little Joe on Lookout Mountain, Trail, has become a shipper, and the Little Giant is also being worked for all it is worth.

The Rossland Board of Trade has been revived and J. B. McArthur elected president. One of its first acts was the extension of an invitation to the members of the British Association. An influx of distinguished visitors was the result. Among those who accepted the courtesy extended by the city were Professors Armstrong and Myers, of Oxford University; Forsyth and Ewing, of Cambridge University; G. Lampligh, H. Mill, Sir George Armstrong, C. Boyes and C. Le Neve Foster, of London; J. Scott Kellie, of the *London Times*; M. Meslon, professor of chemistry at Nancy; Sir Bosdin Leech, of the Manchester

Ship Canal; E. P. Oselor, of the C.P.R.; B. C. Walker, of the Bank of Commerce; A. B. Coleman of the Toronto School of Mines, and Drs. Selwyn and Dawson, of the Canadian Geological Survey.

Our visitors were a very representative body. They numbered among themselves names famous in business, in science, in mining and in journalism. They were very much interested in what they were able to see of Rossland and its mines. Some had visited the camp previously, some had already invested in its mines. Of course, the point of view taken of the city varied with each. But whether it was taken from the metallurgical or from the more purely business standpoint, all were more than pleased. C. Le Neve Foster, perhaps the most famous living geologist, declared the immensity of our mines exceeded his utmost expectations. Professor Armstrong favoured us with a letter suggesting some methods regarding the scientific treatment of our ores which will, no doubt, be found of great practical value.

A part of his letter which treated on the smelter at Trail was particularly interesting reading to the in-

habitants of that town. He pointed out that the vomiting of sulphurous fumes out of the chimneys of the smelter would result in the conversion of the pine-clad slopes around the town into arid wastes. The admixture of volatilized arsenic in the vapour did not mend matters. The learned professor went on to say that while this condition of things could not be allowed to continue, smelter-owners had a very practical consolation. The development of the mines meant the use of nitro-glycerine. Into the manufacture of this product sulphuric acid largely entered. The sulphur now wasted in the present process of burning could, under other conditions, be used for conversion into sulphuric acid. The expense incurred in purifying the smoke of the smelter, apart from its hygienic aspect, would thus have a more or less remunerative return.

Altogether we are to be congratulated on the visit. It cannot be that the favourable views entertained of Rossland by men of such standing will not have a good effect upon the outside public. It will be seen that Rossland has good reasons for its existence and that there is something tangible behind all the boom and wild talk and doubtful share transactions. Another boom will hardly result, but a good effect upon the market must inevitably follow. A. W. D.

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THE QUALIFICATION OF ASSAYERS.

TO THE EDITOR:—I read with great pleasure in the last issue of your valuable journal, your remarks in reference to the qualification of assayers, and raising the status of the Provincial Government Certificate by means of a laboratory course, (albeit of 'some months'); this is a step in the right direction but it does not go far enough, and candidates should produce testimonials of at any rate twelve months' practical work in some metallurgical laboratory and be British Subjects. And especially should it be insisted that apprenticeship, pupilage or whatever you choose to call it, should be under a man thoroughly competent in the profession and not under some irresponsible person who has bought an outfit for \$90 or \$100 and stuck out his shingle "Chemist and Assayer" knowing no more about the principles underlying the business than the man in the moon.

Under such conditions the list as it now stands, viz; Gold, Silver, Lead, Copper (three methods), Zinc, Nickel, Iron (two



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methods), Silica and Lime, with perhaps a qualitative analysis or two added, should make an examination well worth the trying.

Another thing which a great many people would like to know is—where and how soon is the next examination to be held?

While speaking of the Government in its mining relations I would like to call your attention to a few facts in connection with the Bureau of Mines situated at Victoria, B.C. On turning up the estimates for the year ended July 1897 you will find that \$4,500 per annum for salaries, \$3,000 for incidental expenses is voted to this admirable (*sic*) institution.

Omitting entirely the salary of Provincial Mineralogist (whose work does not seem very clearly defined) and allowing him one-half the incidental expenses, we have still \$3,000 of the public's money (including assaying public) spent annually for the maintenance of an assay office in Victoria which is in open competition with all other assayers in the province, and, taken as a whole at lower prices for its work.

I maintain Mr. Editor that this money could be spent more to the advantage of this glorious province of ours by providing suitable examinations on all mining subjects and by conducting evening classes in different parts of the country on mining and kindred subjects.

AURUM.

PUBLICATIONS.

"SOME Ores and Rocks of Southern Slocan Division, West Kootenay, B.C.," by J. C. Guillian, B.A. Sc., and W. S. Johnson, B.A. Sc., Slocan City, B.C. This exceedingly interesting and valuable paper is reprinted from the "Canadian Record of Science, 1897," and issued in pamphlet form. The authors have well described the rocks and ores found within the area of the drainage basins of the Nile, Springer and Lemon Creeks, west of the divide between Kootenay Lake and Slocan Lake and River. This district is well mineralized and affords an attractive field for petrological investigation.

"Hidden Mines, and How to Find Them," by W. Thos. Newman (The M. Rogers Publishing Co., Toronto; price, \$2.00 cloth, \$2.50 leather). No man can learn how to prospect for minerals by reading works on mineralogy, and it is doubtful if any student of this book would be much the wiser if he had no previous practical knowledge of the subject whereof it treats. The work, however, contains much useful information and sensible advice, as the following extract regarding the value of large bodies of low-grade ore will show:

"New processes and improved machinery tend to closer saving and more economical work, and what is desired to-day is large bodies of low-grade ore. Many a mine is paying dividends at the present time that a few years ago could not be worked at all, because the ore was of too low-grade to be profitably treated by the methods of appliances then in use. Every year is liable to see the tendency in this direction grow and therefore deposits of low-grade ore should be carefully looked after."

"The Kootenay Guide" for September in addition to other useful information describes the several possible routes to the Klondike gold fields.

"Brownlee's Handbook of British Columbia," compiled by Jas. Brady M.E. of Rossland and J. H. Brownlee C.E. of Vancouver, and published by the Thomson Stationery Co. Ltd., Vancouver, contains a very excellent synopsis of the laws governing quartz and placer mining in British Columbia. We can confidently recommend this publication to both prospectors and investors.

We are in receipt of a map of the Yukon Gold Fields published by the Thomson Stationery Co. Vancouver, price 25 cents. It is a fair enough map for the price, and this is perhaps all that can be said in its recommendation.

Shipping Mines.

The ore shipments to various smelters from the principal mines for the last week ending August 28th were:—

	TONS.
Le Roi.....	1,395
Iron Mask.....	32
Columbia & Kootenay.....	280
Centre Star.....	96
Cliff.....	40
Total.....	1,843

From January 1st to August 28th, inclusive, the shipments of ore from mines at Rossland to smelters were as follows:

MINE.	TONS.
Le Roi.....	35,742
War Eagle.....	6,558
Columbia & Kootenay.....	2,140
Iron Mask.....	2,324
Jumbo.....	91
Josie.....	385
Cliff.....	627
Centre Star.....	724
Red Mountain.....	56
O. K.*.....	172
Evening Star.....	39
Giant.....	21
I. X. L.....	12
Total.....	48,891

* Concentrates.

From January 14 to June 19, inclusive, the ore milled in the camp was as follows:

MINE.	TONS.
O. K.....	2,472
I. X. L.....	230
Total.....	2,702

SLOCAN—From January to July:

Payne.....	2,568,000
Ruth.....	2,160,000
Slocan Star.....	360,000
Washington.....	224,000
Whitewater.....	210,000
Noble Five.....	129,095
Great Western.....	91,000
Ibex.....	90,000
Surprise.....	34,000
Slocan Boy.....	30,000
Wonderful.....	28,000
Coin.....	21,000
Ruby Silver.....	16,000

Total..... 5,964,095

Van Anda and Victoria-Texada, Texada Island, and Consolidated Alberni, Vancouver Island, in the coast district, have also shipped ore.

The shipments of ore from Sandon from August 10th to September 16th, inclusive, 1897, were as follows:—

	TONS.
Slocan Star.....	1,160
Ruth.....	1,380
Payne.....	1,863½
Idaho Mines.....	426
Noble Five.....	268½
Reco.....	140
American Boy.....	16
Slocan Boy.....	15
Wonderful.....	14
Ajax.....	14½
Majestic.....	12
Total.....	5,309½

Mine Dividends Paid.

The dates and amounts of dividends paid by the Le Roi mine are as follows:—

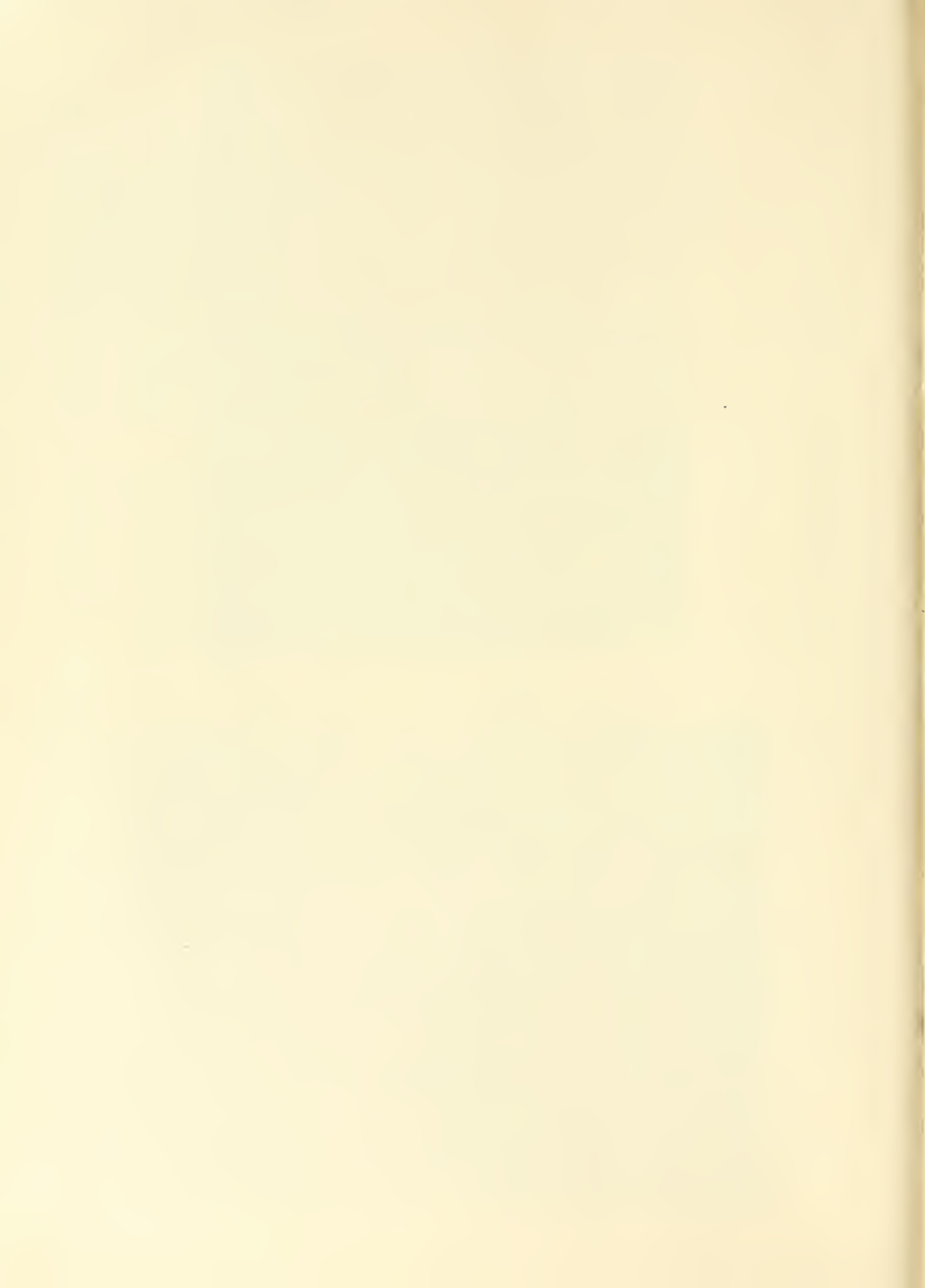
October 2, 1895.....	\$25 000
February 6, 1896.....	50 000
March 4, 1896.....	25,000
May 15, 1896.....	50,000
June 10, 1896.....	25,000
July 15, 1896.....	25,000
October 22, 1896.....	25,000
December 3, 1896.....	25,000
January 6, 1897.....	25,000
January 27, 1897.....	25,000
February 26, 1897.....	25,000
March 29, 1897.....	25,000
April 30, 1897.....	25,000
May 29, 1897.....	25,000
June 30, 1897.....	25,000
July 3, 1897.....	25,000
July 20, 1897.....	25,000
August 3, 1897.....	50,000
September 7, 1897.....	50,000
Total.....	\$575,000



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VANCOUVER, B.C.

Mining Stocks.

Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., Sep. 18, '97

Company.	Capital.	Par Value.	Price.
TRAIL CREEK.			
Big Three.....	\$3,500,000	\$1	\$ 10
Bruce.....	1,000,000	1	10
Butte.....	1,000,000	1	03
Caledonia Con.....	500,000	1	05
California.....	2,500,000	1	15
Camp Bird.....	1,000,000	1	05
Celtic Queen.....	750,000	1	05
Centre Star.....	500,000	1	
Colonna.....	1,000,000	1	20
Commander.....	500,000	1	18
Deer Park.....	1,000,000	1	12
Delaware.....	1,000,000	1	12
Eastern Star.....	500,000	1	20
Enterprise.....	1,000,000	1	20
Evening Star.....	1,000,000	1	19
Georgia.....	1,000,000	1	15
Gertrude.....	500,000	1	10
Golden Drip.....	500,000	1	15
Great Western.....	1,000,000	1	12
Hattie Brown.....	1,000,000	1	10
High Ore.....	500,000	1	05
Imperial.....	1,000,000	1	10
Iron Horse.....	1,000,000	1	20
Iron Mask.....	500,000	1	45
I.X.L.....	1,000,000	5	10
Josie.....	700,000	1	45
Jumbo.....	500,000	1	70
Kootenay-London.....	1,000,000	1	10
Le Roi.....	2,500,000	1	8 00
Lilly May.....	1,000,000	1	20
Mabel.....	1,000,000	1	15
Mayflower.....	1,000,000	1	11
Monita.....	750,000	1	19
Monte Cristo.....	1,000,000	1	20
Morning Star.....	1,000,000	1	08
Nest Egg Firefly.....	1,000,000	1	02
Northern Belle.....	1,000,000	1	10
Novelty.....	1,000,000	1	09
Palo Alto.....	1,000,000	1	05
Phoenix.....	500,000	1	10
Poorman.....	500,000	1	10
Red Mountain View.....	1,000,000	1	11
Roseland, Red Mountain.....	1,000,000	1	22
St. Elmo.....	1,000,000	1	06
St. Paul.....	1,000,000	1	12½
Silverine.....	500,000	1	06
Southern Cross & W. Con.....	500,000	1	20
Virginia.....	500,000	1	12
War Eagle Consolidated.....	2,000,000	1	1 00
West Le Roi.....	500,000	1	20
White Bear.....	2,000,000	1	19
AINSWORTH, NELSON AND SLOCAN.			
American Boy.....	1,000,000	1	15
Fern Gold.....	2,000,000	0 25	50
Index of Slocan.....	300,000	0 25	2½
Arlington.....	1,000,000	1	13
Argo.....	100,000	0 10	10
Athabasca.....	1,000,000	1	50
Black Hills.....	100,000	0 10	10
Buffalo of Slocan.....	150,000	0 25	25
Bondholder.....	1,000,000	1	04
Alamo.....	500,000	1	
Canadian M. M. and S. Co.....	2,000,000	1	07½
Cumberland.....	500,000	10	
Dardanelles.....	1,000,000	1	16
Dellie.....	750,000	1	12
Eldon.....	1,000,000	1	05
Elise.....	1,000,000	1	05
Ellen.....	1,000,000	1	07½
Elkhorn.....	1,000,000	1	10
Exchequer.....	1,000,000	1	10
Goodenough.....	800,000	1	25
Gibson.....	650,000	1	17½
Grey Eagle.....	750,000	1	
Hall Mines.....	300,000	£1	
Idler.....	1,000,000	1	12½
London.....	150,000	25	25
Minnesota.....	1,000,000	1	
Nelson-Poorman.....	250,000	0 25	25
Northern Light.....	250,000	1	16½
Noble Five Con.....	1,200,000	1	30
Ottawa and Ivanhoe.....	1,000,000	1	12½
Phoenix Consolidated.....	1,000,000	1	07
Rambler Con.....	1,000,000	1	42
Reco.....	1,000,000	1	1 75
Slocan-Reiprocity.....	1,000,000	1	06
Slocan Star.....	500,000	50	2 50

COMPANY.	Capital.	Par Value.	Price.
Santa Marie.....	\$1,000,000	\$1	\$ 05
Sheriff.....	1,000,000	1	24
Silver Band.....	250,000	0 25	12½
Slocan Queen.....	1,000,000	1	10
Star.....	1,000,000	1	05
St. Keverne.....	1,000,000	1	06
Sunshine.....	500,000	10	
Two Friends.....	240,000	.30	
Washington.....	1,000,000	1	25
Wonderful.....	1,000,000	1	10
LARDEAU.			
Consolidated Sable Creek Mining Co.....	1,500,000	1	10
TEXADA ISLAND.			
Texada Proprietary.....	250,000	25	25
Van Anda.....	5,000,000	1	25
Victoria-Texada.....	150,000	0 25	25
Texada Kirk Lake.....	600,000	1	1 00
Raven.....	1,000,000	1	10
Gold Bar.....	100,000	0 10	
VANCOUVER ISLAND.			
Alberni Mountain Rose.....	250,000	1	05½
Consolidated Alberni.....	500,000	1	20
Mineral Creek.....	500,000	1	05½
Mineral Hill.....	750,000	1	10
Quadra.....	500,000	1	10
CARIBOO.			
Cariboo Gold Fields Ltd.....	£100,000		
Cariboo Hydraulic.....	300,000		
Horsefly Hydraulic.....	200,000		
Horsefly Gold Mining Co.....	1,000,000	10	10 00
Cariboo M. & D. Co.....	300,000	1	25
Golden River Quenelle.....	£350,000	£1	2 50
Victoria Hydraulic.....	300,000	1	85
LILLOOET DISTRICT.			
Golden Cache.....	500,000	1	2 00
Alpha Bell.....	500,000	1	50
Cayoosh Creek Mines.....	500,000	1	50
Lillooet Gold Reels.....	200,000	25	25
FAIRVIEW CAMP.			
Tin Horn.....	200,000	0 25	60
Winchester.....	2 0,000	0 25	25
BOUNDARY.			
Old Ironsides.....	1,000,000	1	10
Golden Crown.....	2,000,000	1	20
Boundary Creek M. & M. Co.....	1,500,000	1	10
CAMP MCKINNEY.			
Cariboo.....	800,000	1	55

† Dividends declared to date are as follows: Le Roi, \$575,000; War Eagle, \$217,500; Cariboo, \$172,000; Slocan Star, \$350,000; Reco, \$150,000; Rambler Cariboo, \$40,000; Idaho, \$152,000; Alamo, Cumberland, Noble Five and Goodenough have also paid dividends.
 The Le Roi has declared a dividend of \$50,000 since last return and the Cariboo of Camp McKinney \$16,000.

Agents.

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4 Years in British Columbia

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Reports, Maps. Plans and Estimates

ALBERNI, B.C.

LONDON REGISTERED COMPANIES.

NAME OF COMPANY.	When Regd.	Authrsd. Capital.	Amount Issued.	Num Val	Address of London Office.	Name of Secretary.
Adams British Columbia Company.....	1897	£100,000	£.....	1	28 Gracechurch Street.....	A. G. Beeston.
Big Valley Creek, Cariboo.....	1896	125,000	16,291	1	6 Great St. Helens, E.C.....	J. Foster.
British Columbia Corporation.....	1891	300,000	117,190	10	70 Basinghall Street.....	J. S. Green.
British Columbia Development Assocn..	1895	20,000	19,900+	1	45 Broad Street Avenue.....	W. Townsend.
British Columbia Financial Trust.....	1897	250,000	85,000	1	Blomfield House, E.C.....	P. J. Hays.
British Columbia Land Invest. Agency...	1887	110,000	104,000	1	.....	.....
British Columbia Mining.....	1896	20,000	.....	10	Suffolk House, Cannon Street	F. Buckley.
British Columbia Syndicate.....	1895	2,000	.....	1	30-1 St. Swithin's Lane.....	J. A. Wilkie.
B.C. Dev. Syndicate.....	1897	30,000	10,000	1	16 St. Helen's Place.....	A. Davidson.
British Kootenay Syndicate.....	1895	10,000	8,000	1	20 Bucklersbury.....	W. Hollick.
British Columbia Purchase Syndicate....	1894	8,000	5,000	.....	14 Old Jewry.....	.....
Canadian Pacific Exploration.....	1897	500,000	375,000	1	88 Cannon Street.....	H. B. Cheslyn Callow.
Cariboo Goldfields.....	1894	100,000	70,000	1	6 and 8 Eastcheap.....	W. B. Brough.
Cariboo Reefs.....	1895	20,000	16,760	1	36 Walbrook.....	W. Boyle.
Cottonwood (E.C.) Alluvial Mining.....	1896	65,000	.....	1	55-6 Bishopsgate Street.....	J. Williams.
Dominion Mining Development & Agency	1897	100,000	.....	1	6 Gt. Winchester Street, E.C..	W. Smith.
East Kootenay Exploration Syndicate....	1892	67,500	67,500	1	358 Mansion House Chbrs....	F. J. Warner.
Fraser River Mines.....	1895	10,000	.....	5	9 Gracechurch Street.....	W. Pears.
Galena Mines, West Kootenay.....	1896	550,000	525,000	1	20 Threadneedle Street.....	P. F. Dietz.
Globe Venture Syndicate, Kootenay.....	1897	100,000	.....	1	31 Old Broad Street.....	W. H. Allen.
Golden River, Quesnelle.....	1896	350,000	.....	1	6 Great St. Helens.....	.....
Goldfields of British Columbia.....	1897	600,000	60,000	1	16 Copthall Avenue.....	F. C. Hole.
Hall Mines.....	1893	300,000	275,000	1	Leadenhall Buildings.....	T. Ramsay.
Invicta Mines, East Kootenay.....	1895	100,000	95,600	1	25 Abchurch Lane.....	F. J. Warner.
International Development of B.C.....	1897	300,000	50,000	.....	31 Lombard Street.....	E. M. Crawley.
Keotenay and Cariboo Syndicate.....	1896	5,000	.....	1	.....	.....
Kootenay Development.....	1897	10,000	.....	1	22 Fenchurch Street.....	A. Kennedy.
Kootenay Goldfields Syndicate.....	1896	20,000	.....	1	39 Lombard Street.....	.....
Lillooet, Fraser, and Cariboo Goldfields..	1895	300,000	250,000	1	1 and 2 Gt. Winchester Street	E. A. Bennett.
London and British Columbia Goldfields..	1896	200,000	100,000	1	3 Laurence Pountney Hill....	E. R. Tasman.
London and Vancouver Finance, &c.....	1897	100,250	.....	1	.....	.....
New Fraser River.....	1897	75,000	.....	1	23 Leadenhall Street.....	W. A. Stearns.
New Goldfields of British Columbia.....	1897	250,000	41,790	1	23 Leadenhall Street.....	W. A. Stearns.
New Vancouver Coal Mining and Land..	1889	215,000	.....	1	12 Old Jewry Chambers.....	J. Ramsden.
Pioneer Devel. and Exp. of B.C.....	1896	150,000	100,000	.....	9 and 10 King Street.....	W. Cooper.
Quesnelle and Cariboo Gflds., &c., Synd	1895	12,000	.....	50	Hart's Head Ch., Sheffield....	H. Cawwood.
Quesnelle River Mining.....	1897	55,000	.....	1	.....	.....
Revelstoke Mining.....	1889	40,000	3,552	10	27 Clement's Lane.....	.....
Vancouver & British Columbia Gen. Expl.	1896	25,000	25,000	1	20 Threadneedle Street.....	P. F. Dietz.
Waverly Mine.....	1897	100,000	1	16 Copthall Avenue.....	R. S. Williams.

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 G. Stanley..... Nelson, "
 Thompson Bros..... "
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 P. Lamont & Co..... "
 Slocan News Co..... Sandon, "
 F. W. Brown, Post Office..... Trail, "
 S. B. Shaw..... Rossland, "
 H. S. Wallace..... "
 M. W. Simpson..... "
 H. G. Parson..... Golden, "
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 M. Skojiski..... Sicamous, "
 Slocan News Co..... Slocan City, "
 Linton Bros..... "
 W. H. Udall..... "
 O. F. Nelson..... New Denver, "
 H. B. Munroe..... Greenwood City, "
 Smith & McRae..... "
 Bradford & Ellis..... Salmo, "
 Silvertown News Co..... Silvertown, "
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 Tamper Cigar Co..... "
 Vaughan & Morill..... "

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 Wm. M. Shaw & Co..... Spokane, Wash
 Shaw, Borden & Co..... "
 J. W. Graham & Co..... "
 Puget Sound News Co..... Seattle, Wash
 Lowman & Hanford..... "
 B. B. Rich..... Portland, Or
 John Nowland & Co..... Leadville, Col

Mining Papers on File.

The following papers are kept on file at the offices of the B.C. MINING RECORD for the use of visitors who may wish to consult their columns:

Mining and Scientific Press..... San Francisco, Cal
 Mining and Electrical Review..... "
 Pacific Electrician..... "
 Mining and Metallurgical Journal..... Los Angeles, Cal
 Mining Herald..... Seattle, Wash
 Washington Mining Journal..... "
 Miner and Electrician..... Spokane, Wash
 Mining..... "
 Spokesman-Review..... "
 North-Western Mining Facts..... "
 Daily Call..... Port Townsend, "
 Western Mining World..... Butte, Montana
 American Adviser..... Chicago, Ill.
 Engineering and Mining Journal..... New York

Nanaimo Free Press	Nanaimo, B.O.
Mining Critic.....	Vancouver
The Province.....	Victoria, "
The Times.....	" "
The Colonist.....	" "

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FRED M. WELLS, Mine Examiner.

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C. E. USSHER,

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W. R. CALLAWAY, General Passenger Agent, Soo Line, Minneapolis, Minn.

ROBERT KERR, General Passenger Agent, Western and Pacific Divisions, Winnipeg, Man.

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THE COMPANY'S Elegant Steamers, **UMATILLA**, **CITY OF PUEBLA** and **WALLA WALLA**, carrying H.R.M. Mails, leave **Victoria, B.C.**, for San Francisco at 8 p.m., May 4, 9, 14, 19, 24, 29 June 3, 8, 13, 18, 23, 28. July 3, 8, 13, 18, 23. Due at San Francisco, a.m., May 7, 12, 17, 22, 27, June 1, 6, 11, 16, 21, 26, July 1, 6, 11, 16, 21, 26. Leave San Francisco for Victoria, B.C., at 9 a.m., May 1, 6, 11, 16, 21, 26, 31, June 5, 10, 15, 20, 25, 30. July 5, 10, 15, 20, 25. Due at Victoria, a.m., May 4, 9, 14, 19, 24, 29, June 3, 8, 13, 18, 23, 28, July 3, 8, 13, 23, 28.

Alaska Route.

THE Elegant Steamers **CITY OF TOPEKA** and **QUEEN** leave **Victoria** for Alaska May 9, 14, 24, 27, June 8, 13, 23, 28, July 8, 13, 23. Due back at Victoria May 21, 26, June 5, 10, 19, 25, July 4, 10, 19, 25, Aug. 3. The Company reserves right to change, without previous notice, steamers, sailing dates and hours of sailing.

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ONLY 22 hrs. from Victoria to Spokane
 30 " " " " Rossland
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The Northern Pacific Railway

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Quick Time, and no delay in transit

TRAVELLERS from the East or from the West will find this the Quickest and most
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TIME SCHEDULE—In effect March 28th, 1897—Trains leave Seattle for Spokane, St. Paul and East, Rossland
 Nelson, Kootenay and Kettle River points, 4.00 p.m. This card subject to change without notice.
 Through tickets to Japan and China via the Northern Pacific Steamship Co.

For full information, Time Cards, etc., call on, or address

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FOR PUGET SOUND POINTS

TAKE THE FINE STEAMER

City of Kingston

Speed, 18 knots. Tonnage, 1147.

8.00 a.m. Lv M1	... *Victoria	110 Ar	3.45 a.m.
11.00 a.m. Lv 38	Pt. Townsend	72 Lv	1.00 a.m.
1.45 p.m. Lv 82	Seattle	28 Lv	10.00 p.m.
4.00 p.m. Ar 110	Tacoma *	M1 Lv	8.00 p.m.

Steamer City of Kingston makes connection
 at Tacoma with Northern Pacific trains to and
 from points East and South.

*Daily except Sunday

E. E. BLACKWOOD, Agent,
Victoria, B.C.

Spokane Falls & Northern Nelson and Fort Sheppard Red Mountain Railways

The only all-rail route without change
 of cars between Spokane, Rossland and
 Nelson; also between Nelson and Ross-
 land.

DAILY EXCEPT SUNDAY.

Leave.	Arrive.
7:30 a.m. Spokane	7:00 p.m.
10:30 a.m. Rossland	3:25 p.m.
9:00 a.m. Nelson	5:20 p.m.

Close connections at Nelson with steamer for
 Kaslo and all Kootenay Lake points.

Passengers for Kettle River and Boundary
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The Finest Train in the World !

The long-talked of Limited Trains on

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C., St. P., M. & O. Railway, to run be-
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Minneapolis,
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are now in service.

The press as well as the people who have in-
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 the train is vestibuled with broad plate glass,
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 to the comfort of the train.

IF YOU ARE GOING EAST

why not patronize the new

Northwestern Limited.

Excursion or other classes of tickets are good
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Tickets, sleeping car reservations and Map
 Folder on application to your home agent, or
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F. W. PARKER,

Commercial Agent,

608 First Avenue,

SEATTLE.

TRANSPORTATION COMPANIES.

Canadian Pacific Navigation Co., Ltd.

TIME TABLE NO. 28.

(Taking effect December 28th, 1896.)

VANCOUVER ROUTE.

VICTORIA TO VANCOUVER daily except Monday at 10 o'clock.
VANCOUVER TO VICTORIA daily except Monday at 13 o'clock or on arrival C.P.
Railway No. 1 Train.

NEW WESTMINSTER ROUTE.

LEAVE VICTORIA—For New Westminster, Ladner's Landing and Lulu Island Sunday at 23 o'clock; Wednesday and Friday at 7 o'clock. Sunday's steamer to New Westminster connects with C.P.R. Train No. 2 going east, Monday.

FOR PLUMPER PASS—Wednesdays and Fridays at 7 o'clock.

FOR MORESBY AND PENDER ISLANDS—Fridays at 7 o'clock.

LEAVE NEW WESTMINSTER—For Victoria Monday at 13:15 o'clock. Thursday and Saturday at 7 o'clock.

FOR PLUMPER PASS—Saturday at 7 o'clock.

FOR PENDER AND MORESBY ISLANDS—Thursday at 7 o'clock.

FRASER RIVER ROUTE.

Steamer leaves NEW WESTMINSTER for CHILLIWACK and way landings every Tuesday, Thursday and Saturday at 7 o'clock during river navigation.

ISLANDS ROUTE.

Steamer "Rainbow" leaves Vancouver on Monday at 12 noon and Thursday at 10 a. m. for Texada, Shoal Bay and way landings.

NORTHERN ROUTE.

Steamships of this Company leave Victoria for Fort Simpson via Vancouver and intermediate ports on the First and Fifteenth of each month. If sufficient inducements offer, will call at points on the West Coast and Queen Charlotte Islands.

BARCLAY SOUND ROUTE.

Steamer "Tees" leaves Victoria for Alberni and Sound ports the 10th, 20th and 30th of each month.

The Company reserve the right of changing this Time Table at any time without notification.

G. A. CARLETON,
General Agent.

JOHN IRVING,
Manager.

Union Steamship Co., Ltd., B.C.

Head Office and Wharf, VANCOUVER, B.C.

NORTHERN SETTLEMENTS—SS. Comox sails from Company's wharf every Tuesday at 9 a.m. for Bowen Island, Howe Sound, Sechart, Jervis Inlet, Froeck, Texada Island, Lund, Hernando Island, Cortez Island, Read Island, Valdez Island, Shoal Bay, Phillips Arm, Frederick Arm, Thurlow Island, Loughborough Inlet, Salmon River, Port Neville; and sails every Friday at 11 a.m. for way ports and Shoal Bay, calling at Butte Inlet every six weeks.

MOODYVILLE & NORTH VANCOUVER FERRY.

LEAVES MOODYVILLE—8, 9.15, 10.45, 12 noon, 2, 4, and 5.45 p.m.

LEAVES VANCOUVER—8.35, 10, 11.20, 1.15 p.m., 3.15, 5.15, and 6.20. Calling at North Vancouver each way, excepting the noon trip.

Freight steamers SS. Capilano, and SS. Coquitlam; capacity, 300 tons d.w.

Tugs and scows always available for towing and freighting business. Large storage accommodation on Company's wharf.

H. DARLING, Manager.

Telephone 94.

P.O. Box 77.

6 PASSENGER TRAINS 6

Each day between Trail and Rossland on the

Columbia & Western Ry.

Trains No. 2, 3, 5 and 6 do not run on Sunday.

RUNS MADE IN ONE HOUR.

No. 6 leaves Rossland at 7 a.m., connects in the morning with steamer at Trail.

No. 3 leaves Trail at 8:15 a.m., connects at Rossland with Red Mountain train for Spokane.

No. 4 leaves Rossland at 11 a.m.

No. 1 leaves Trail at 12:30 p.m., connects with C.P.R. main line steamers from the north at Trail.

No. 2 leaves Rossland at 3 p.m., connects with C.P.R. main line steamers for the north at Trail.

No. 6 leaves Trail at 5:45 p.m., connects with steamer Lytton at Trail.

Trail, B.C. October 1, 1897.

E. P. GUTELIUS, General Supt.

The Columbia & Kootenay Steam Navigation Co., Ltd.

TIME TABLE NO. 10.

In effect June 8th, 1896.

ARROWHEAD-TRAIL ROUTE, STEAMER "NAKUSP."

South bound; read down. North bound; read up
Mon. Wed. Fri. 7 p.m. De ARROWHEAD Ar 11.30 a.m. Wed. Fri. Sun
" " " 11 p.m. Ar NAKUSP De 7.30 a.m. " " "
" " " 12 m. De " Ar 6 a.m. " " "
Tues. Thurs. Sat. 9 a.m. De ROBSON De 8.30 p.m. Tues. Thurs. Sat
" " " 12 noon De " Ar 8 p.m. " " "
" " " 2 p.m. Ar TRAIL De 4.30 p.m. " " "

Connections at Arrowhead with C.P.R. to and from Revelstoke and all points east and west; at Nakusp with Nakusp & Slocan R. to and from Slocan points; at Robson with C. & K. R. to and from Nelson and Kootenay Lake points; at Trail with C. & W. R. to and from Rossland; at Trail with Str. "Trail" to and from Waneta, Northport and Spokane.

TRAIL-NORTHPORT ROUTE, STEAMER "TRAIL."

Daily except Sun. 8 a.m. De TRAIL Ar 4.30 p.m. Daily except Sun.
9 a.m. Ar WANETA De 3 p.m.
10 a.m. Ar NORTHPORT De 1 p.m.

Connections at Northport with S.F. & N.R. to and from Spokane and way points; at Trail with C. & W. R. to and from Rossland, and with Str. "Nakusp" to and from Robson, Nakusp and Revelstoke.

KOOTENAY LAKE ROUTE, STEAMER "KOKANEE."

Daily except Sun. 4.00 p.m. De NELSON Ar 9.30 a.m. Daily except Sun.
8 p.m. Ar KASLO De 5.30 a.m.

Saturday, June 6th and every second Saturday following, steamer leaves Kaslo at 10 p.m. for Bonner's Ferry; returning leaves Bonner's Ferry Sunday at noon.

Connections at Nelson with C. & K. R. to and from Robson, Trail, Rossland, Nakusp, Revelstoke and C.P.R. points; at Nelson with N. & F.S.R. to and from Spokane and way points; at Kaslo with K. & S. R. to and from Slocan points; at Bonner's Ferry with G.N.R.

The right is reserved to change this schedule at any time without notice.

For tickets, rates, etc., apply at Company's office, Nelson.

T. ALLAN,
SECRETARY.

J. W. TROUP,
MANAGER, Nelson B.C.

INTERNATIONAL NAVIGATION & TRADING COMPANY, LTD.

Steamers "International" and "Alberta" on Kootenay Lake and River.

TIME CARD IN EFFECT 1st OCTOBER, 1897.

Subject to Change without Notice.

Five-Mile Point Connection with all Passenger Trains of N. & F. S. R'y. to and from Northport, Rossland and Spokane.

Tickets sold and Baggage Checked to all U.S. Points.

Leave Kaslo for Nelson and Way Points, daily except Sunday, 5.45 a.m.

Arrive Northport, 12:15 p.m.; Rossland, 3:40 p.m.; Spokane, 6 p.m.

Leave Nelson for Kaslo and Way Points, daily except Sunday, 4.45 p.m.

Leaving Spokane, 8 a.m.; Rossland, 10:30 a.m.; Northport, 1:50 p.m.

NEW SERVICE ON KOOTENAY LAKE.

Leave Kaslo for Kaslo, etc., Tues., Wed., Thurs., Fri., Sat., 8:30 a.m.

Arrive Kaslo, 12:30 p.m.

Leave Kaslo for Nelson, etc., Mon., Tues., Wed., Thurs., Fri., 4:00 p.m.

Arrive Nelson, 8:00 p.m.

BONNER'S FERRY AND KOOTENAY RIVER SERVICE.

* Leave Kaslo, Sat., 4 p.m. Leave Bonner's Ferry, Sun., 1 p.m.

Arrive Boundary, Sun., 12 p.m. Arrive Boundary, Sun., 5 p.m.

Arrive Bonner's Ferry, Sun., 10:30 a.m. " Kaslo, Sun., 10 p.m.

Close connection at Bonner's Ferry with trains East bound, leaving Spokane 7:40 a.m., and West bound, arriving Spokane 7 p.m.

*The Alberta awaits the arrival of the International before leaving for Bonner's Ferry.

GEORGE ALEXANDER,

Kaslo, B.C., 12th July, 1897.

General Manager.

Kaslo & Slocan Railway.

TIME CARD.

Subject to change without notice. Trains run on Pacific standard time

Going west.		Going east.
Leave 8.00 a.m.	Kaslo	Arrive 3.50 p.m.
" 8.26 "	South Fork	" 3.15 "
" 9.26 "	Sproule's	" 2.15 "
" 9.51 "	Whitewater	" 2.00 "
" 10.03 "	Bear Lake	" 1.48 "
" 10.18 "	McGuigan	" 1.33 "
" 10.33 "	Cody Junction	" 1.12 "
Arrive 10.50 "	Sandon	Leave 1.00 "

CODY LINE.

Leave 11.00 a.m. Sandon Arrive 11.45 a.m.
Arrive 11.20 a.m. Cody Leave 11.25 a.m.

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